

Sequence Listing



*new
seq. list
for Amelie A*

<110> Innogenetics N.V.

<120> Purified hepatitis C virus envelope proteins for diagnostic and therapeutic use.

<130> 2551-68

<140> 09/995,791

<160> 122

<170> PatentIn 3.1

<210> 1

<211> 21

<212> DNA

<213> Hepatitis C virus

<400> 1

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21

<210> 2

<211> 68

<212> DNA

<213> Hepatitis C virus

<400> 2

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60

taactgca

68

<210> 3

<211> 642

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..639

<220>

<221> mat_peptide

<222> 1..636

<400> 3

atg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct tta ctg tcc tgt

48

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
| Met | Pro | Gly | Cys | Ser | Phe | Ser | Ile | Phe | Leu | Leu | Ala | Leu | Leu | Ser | Cys | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | |
| ctg | acc | att | cca | gct | tcc | gct | tat | gag | gtg | cgc | aac | gtg | tcc | ggg | atg | | 96 |
| Leu | Thr | Ile | Pro | Ala | Ser | Ala | Tyr | Glu | Val | Arg | Asn | Val | Ser | Gly | Met | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| tac | cat | gtc | acg | aac | gac | tgc | tcc | aac | tca | agc | att | gtg | tat | gag | gca | | 144 |
| Tyr | His | Val | Thr | Asn | Asp | Cys | Ser | Asn | Ser | Ser | Ile | Val | Tyr | Glu | Ala | | |
| | | | 35 | | | | 40 | | | | | 45 | | | | | |
| gcg | gac | atg | atc | atg | cac | acc | ccc | ggg | tgc | gtg | ccc | tgc | gtt | cgg | gag | | 192 |
| Ala | Asp | Met | Ile | Met | His | Thr | Pro | Gly | Cys | Val | Pro | Cys | Val | Arg | Glu | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| aac | aac | tct | tcc | cgc | tgc | tgg | gta | gcg | ctc | acc | ccc | acg | ctc | gca | gct | | 240 |
| Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr | Leu | Ala | Ala | | |
| | 65 | | | | 70 | | | | 75 | | | | | | 80 | | |
| agg | aac | gcc | agc | gtc | ccc | acc | acg | aca | ata | cga | cgc | cac | gtc | gat | ttg | | 288 |
| Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His | Val | Asp | Leu | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| ctc | gtt | ggg | gcg | gct | gct | ctc | tgt | tcc | gct | atg | tac | gtg | ggg | gat | ctc | | 336 |
| Leu | Val | Gly | Ala | Ala | Ala | Leu | Cys | Ser | Ala | Met | Tyr | Val | Gly | Asp | Leu | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| tgc | gga | tct | gtc | ttc | ctc | gtc | tcc | cag | ctg | ttc | acc | atc | tcg | cct | cgc | | 384 |
| Cys | Gly | Ser | Val | Phe | Leu | Val | Ser | Gln | Leu | Phe | Thr | Ile | Ser | Pro | Arg | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| cgg | cat | gag | acg | gtg | cag | gac | tgc | aac | tgc | tca | atc | tat | ccc | ggc | cac | | 432 |
| Arg | His | Glu | Thr | Val | Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| ata | aca | ggt | cac | cgt | atg | gct | tgg | gat | atg | atg | atg | aac | tgg | tcg | cct | | 480 |
| Ile | Thr | Gly | His | Arg | Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp | Ser | Pro | | |
| | 145 | | | | 150 | | | | 155 | | | | | | 160 | | |
| aca | acg | gcc | ctg | gtg | gta | tcg | cag | ctg | ctc | cgg | atc | cca | caa | gct | gtc | | 528 |
| Thr | Thr | Ala | Leu | Val | Val | Ser | Gln | Leu | Leu | Arg | Ile | Pro | Gln | Ala | Val | | |
| | | | | 165 | | | | 170 | | | | | | 175 | | | |
| gtg | gac | atg | gtg | gcg | ggg | gcc | cat | tgg | gga | gtc | ctg | gcg | ggc | ctc | gcc | | 576 |
| Val | Asp | Met | Val | Ala | Gly | Ala | His | Trp | Gly | Val | Leu | Ala | Gly | Leu | Ala | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| tac | tat | tcc | atg | gtg | ggg | aac | tgg | gct | aag | gtt | ttg | att | gtg | atg | cta | | 624 |
| Tyr | Tyr | Ser | Met | Val | Gly | Asn | Trp | Ala | Lys | Val | Leu | Ile | Val | Met | Leu | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| ctc | ttt | gct | ctc | taatag | | | | | | | | | | | | | 642 |
| Leu | Phe | Ala | Leu | | | | | | | | | | | | | | |
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<211> 795
<212> DNA
<213> Hepatitis C virus
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<220>
<221> CDS
<222> 1..792

<220>
<221> mat_peptide
<222> 1..789

<400> 5

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| gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg 20 25 30 | 96 |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala 35 40 45 | 144 |
| aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu 50 55 60 | 192 |
| ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val 65 70 75 80 | 240 |
| tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val 85 90 95 | 288 |
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys 100 105 110 | 336 |
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr 115 120 125 | 384 |
| ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His 130 135 140 | 432 |
| gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val 145 150 155 160 | 480 |
| ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile 165 170 175 | 528 |
| tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr 180 185 190 | 576 |

ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac 624
 Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205

tgg tcg cct aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca 672
 Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro
 210 215 220

caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg 720
 Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala
 225 230 235 240

ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg att 768
 Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile
 245 250 255

gtg atg cta ctc ttt gct ccc taatag 795
 Val Met Leu Leu Phe Ala Pro
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<210> 6

<211> 263

<212> PRT

<213> Hepatitis C virus

<400> 6

Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
 1 5 10 15

Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
 35 40 45

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140

Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
 145 150 155 160

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
 165 170 175
 Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
 180 185 190
 Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205
 Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro
 210 215 220
 Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala
 225 230 235 240
 Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile
 245 250 255
 Val Met Leu Leu Phe Ala Pro
 260

<210> 7

<211> 633

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..630

<220>

<221> mat_peptide

<222> 1..627

<400> 7

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| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| atg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggt gct gcc aga | 96 |
| Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gaa gac ggc gtg aac tat gca | 144 |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | |
| 35 40 45 | |
| aca ggg aat ttg cct ggt tgc tct ttc tct atc ttc ctc ttg gct tta | 192 |
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu | |
| 50 55 60 | |
| ctg tcc tgt ctg acc att cca gct tcc gct tat gag gtg cgc aac gtg | 240 |
| Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val | |

| 65 | 70 | 75 | 80 | |
|---|-----|-----|-----|-----|
| tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg | | | | 288 |
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val | 85 | 90 | 95 | |
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc | | | | 336 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | 100 | 105 | 110 | |
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg | | | | 384 |
| Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr | 115 | 120 | 125 | |
| ctc gca gct agg aac gcc agc gtc ccc act acg aca ata cga cgc cac | | | | 432 |
| Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His | 130 | 135 | 140 | |
| gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg | | | | 480 |
| Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val | 145 | 150 | 155 | 160 |
| ggg gat ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc | | | | 528 |
| Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile | 165 | 170 | 175 | |
| tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat | | | | 576 |
| Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr | 180 | 185 | 190 | |
| ccc ggc cac ata aca ggt cac cgt atg gct tgg gat atg atg atg aac | | | | 624 |
| Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn | 195 | 200 | 205 | |
| tggtaatag | | | | 633 |
| Trp | | | | |

<210> 8

<211> 209

<212> PRT

<213> Hepatitis C virus

<400> 8

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| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | | | | |
| 1 | 5 | 10 | 15 | |
| Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | | | | |
| 20 | 25 | 30 | | |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | | | | |
| 35 | 40 | 45 | | |

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60
 Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80
 Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95
 Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110
 Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125
 Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140
 Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
 145 150 155 160
 Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
 165 170 175
 Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
 180 185 190
 Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205

Trp

<210> 9

<211> 483

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..480

<220>

<221> mat_peptide

<222> 1..477

<400> 9

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| atg | ccc | ggt | tgc | tct | ttc | tct | atc | ttc | ctc | ttg | gcc | ctg | ctg | tcc | tgt | 48 |
| Met | Pro | Gly | Cys | Ser | Phe | Ser | Ile | Phe | Leu | Leu | Ala | Leu | Leu | Ser | Cys | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| | | | | | | | | | | | | | | | | |
| ctg | acc | ata | cca | gct | tcc | gct | tat | gaa | gtg | cgc | aac | gtg | tcc | ggg | gtg | 96 |
| Leu | Thr | Ile | Pro | Ala | Ser | Ala | Tyr | Glu | Val | Arg | Asn | Val | Ser | Gly | Val | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |

| | |
|--|-----|
| tac cat gtc acg aac gac tgc tcc aac tca agc ata gtg tat gag gca | 144 |
| Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala | |
| 35 40 45 | |
| | |
| gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag | 192 |
| Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu | |
| 50 55 60 | |
| | |
| ggc aac tcc tcc cgt tgc tgg gtg gcg ctc act ccc acg ctc gcg gcc | 240 |
| Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala | |
| 65 70 75 80 | |
| | |
| agg aac gcc agc gtc ccc aca acg aca ata cga cgc cac gtc gat ttg | 288 |
| Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu | |
| 85 90 95 | |
| | |
| ctc gtt ggg gct gct gct ttc tgt tcc gct atg tac gtg ggg gat ctc | 336 |
| Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu | |
| 100 105 110 | |
| | |
| tgc gga tct gtt ttc ctt gtt tcc cag ctg ttc acc ttc tca cct cgc | 384 |
| Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg | |
| 115 120 125 | |
| | |
| cgg cat caa aca gta cag gac tgc aac tgc tca atc tat ccc gcc cat | 432 |
| Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His | |
| 130 135 140 | |
| | |
| gta tca ggt cac cgc atg gct tgg gat atg atg atg aac tgg tcc taatag | 483 |
| Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser | |
| 145 150 155 | |

<210> 10

<211> 159

<212> PRT

<213> Hepatitis C virus

<400> 10

| | |
|---|--|
| Met Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys | |
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| | |
| Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val | |
| 20 25 30 | |
| | |
| Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala | |
| 35 40 45 | |
| | |
| Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu | |
| 50 55 60 | |
| | |
| Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala | |
| 65 70 75 80 | |

Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu
85 90 95

Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu
100 105 110

Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg
115 120 125

Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His
130 135 140

Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser
145 150 155

<210> 11

<211> 480

<212> DNA

<213> Hepatitis C virus

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<221> CDS

<222> 1..477

<220>

<221> mat_peptide

<222> 1..474

<400> 11

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| Met Ser Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys | |
| 1 5 10 15 | |

| | |
|---|----|
| ctg acc ata cca gct tcc gct tat gaa gtg cgc aac gtg tcc ggg gtg | 96 |
| Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val | |
| 20 25 30 | |

| | |
|---|-----|
| tac cat gtc acg aac gac tgc tcc aac tca agc ata gtg tat gag gca | 144 |
| Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala | |
| 35 40 45 | |

| | |
|---|-----|
| gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag | 192 |
| Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu | |
| 50 55 60 | |

| | |
|---|-----|
| ggc aac tcc tcc cgt tgc tgg gtg gcg ctc act ccc acg ctc gcg gcc | 240 |
| Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala | |
| 65 70 75 80 | |

| | |
|---|-----|
| agg aac gcc agc gtc ccc aca acg aca ata cga cgc cac gtc gat ttg | 288 |
| Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu | |
| 85 90 95 | |

| | |
|---|-----|
| ctc gtt ggg gct gct gct ttc tgt tcc gct atg tac gtg ggg gat ctc | 336 |
| Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu | |
| 100 105 110 | |

| | |
|---|-----|
| tgc gga tct gtt ttc ctt gtt tcc cag ctg ttc acc ttc tca cct cgc | 384 |
| Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg | |
| 115 120 125 | |

| | |
|---|-----|
| cgg cat caa aca gta cag gac tgc aac tgc tca atc tat ccc ggc cat | 432 |
| Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His | |
| 130 135 140 | |

| | |
|--|-----|
| gta tca ggt cac cgc atg gct tgg gat atg atg atg aac tgg taatag | 480 |
| Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp | |
| 145 150 155 | |

<210> 12

<211> 158

<212> PRT

<213> Hepatitis C virus

<400> 12

| |
|---|
| Met Ser Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys |
| 1 5 10 15 |

| |
|---|
| Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val |
| 20 25 30 |

| |
|---|
| Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala |
| 35 40 45 |

| |
|---|
| Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu |
| 50 55 60 |

| |
|---|
| Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala |
| 65 70 75 80 |

| |
|---|
| Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu |
| 85 90 95 |

| |
|---|
| Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu |
| 100 105 110 |

| |
|---|
| Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg |
| 115 120 125 |

| |
|---|
| Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His |
| 130 135 140 |

| |
|---|
| Val Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp |
| 145 150 155 |

<210> 13

<211> 636

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS
<222> 1..633

<220>
<221> mat_peptide
<222> 1..630

<400> 13

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|---|-----|
| atg ctg ggt aag gcc atc gat acc ctt acg tgc ggc ttc gcc gac ctc | 48 |
| Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg | 96 |
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gaa gac ggc gtg aac tat gca | 144 |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | |
| 35 40 45 | |
| aca ggg aat ttg cct ggt tgc tct ttc tct atc ttc ctc ttg gct tta | 192 |
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu | |
| 50 55 60 | |
| ctg tcc tgt cta acc att cca gct tcc gct tac gag gtg cgc aac gtg | 240 |
| Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val | |
| 65 70 75 80 | |
| tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg | 288 |
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val | |
| 85 90 95 | |
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc | 336 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | |
| 100 105 110 | |
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg | 384 |
| Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr | |
| 115 120 125 | |
| ctc gcg gct agg aac gcc agc atc ccc act aca aca ata cga cgc cac | 432 |
| Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Thr Ile Arg Arg His | |
| 130 135 140 | |
| gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg | 480 |
| Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val | |
| 145 150 155 160 | |
| ggg gat ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc | 528 |
| Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile | |
| 165 170 175 | |
| tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat | 576 |
| Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr | |
| 180 185 190 | |
| ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac | 624 |

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205

tgg tac taatag
 Trp Tyr
 210

636

<210> 14

<211> 210

<212> PRT

<213> Hepatitis C virus

<400> 14

Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
 1 5 10 15

Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
 20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
 35 40 45

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60

Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125

Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Thr Ile Arg Arg His
 130 135 140

Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val
 145 150 155 160

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile
 165 170 175

Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr
 180 185 190

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn
 195 200 205

Trp Tyr
 210

<210> 15

<211> 26

<212> DNA

<213> Hepatitis C virus

<400> 15

atgcccggtt gctctttctc tatctt

26

<210> 16

<211> 26

<212> DNA

<213> Hepatitis C virus

<400> 16

atggttgggta aggtcatcga taccct

26

<210> 17

<211> 30

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 17

ctattaggac cagttcatca tcatatccca

30

<210> 18

<211> 27

<212> DNA

<213> Hepatitis C virus

<400> 18

ctattaccag ttcacatca tatccca

27

<210> 19

<211> 36

<212> DNA

<213> Hepatitis C virus

<400> 19

atacgacgcc acgtcgattc ccagctgttc accatc

36

<210> 20

<211> 36

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 20

gatggtgaac agctgggaat cgacgtggcg tcgtat

36

<210> 21

<211> 723

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..720

<220>

<221> mat_peptide

<222> 1..717

<400> 21

atg ttg ggt aag gtc atc gat acc ctt aca tgc ggc ttc gcc gac ctc
Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu
1 5 10 15

48

gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg
20 25 30

96

gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala
35 40 45

144

aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
50 55 60

192

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
65 70 75 80

240

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
85 90 95

288

| | |
|--|-----|
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc | 336 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | |
| 100 105 110 | |
| | |
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg | 384 |
| Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr | |
| 115 120 125 | |
| | |
| ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac | 432 |
| Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His | |
| 130 135 140 | |
| | |
| gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg | 480 |
| Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val | |
| 145 150 155 160 | |
| | |
| cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt | 528 |
| Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg | |
| 165 170 175 | |
| | |
| atg gct tgg gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg | 576 |
| Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val | |
| 180 185 190 | |
| | |
| gta tcg cag ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg | 624 |
| Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala | |
| 195 200 205 | |
| | |
| ggg gcc cat tgg gga gtc ctg gcg ggt ctc gcc tac tat tcc atg gtg | 672 |
| Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val | |
| 210 215 220 | |
| | |
| ggg aac tgg gct aag gtt ttg att gtg atg cta ctc ttt gct ccc taatag | 723 |
| Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro | |
| 225 230 235 | |

<210> 22

<211> 239

<212> PRT

<213> Hepatitis C virus

<400> 22

| | |
|---|--|
| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| | |
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| | |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | |
| 35 40 45 | |
| | |
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu | |
| 50 55 60 | |

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80
 Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95
 Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110
 Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125
 Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140
 Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
 145 150 155 160
 Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
 165 170 175
 Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
 180 185 190
 Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala
 195 200 205
 Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val
 210 215 220
 Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro
 225 230 235

<210> 23

<211> 561

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..558

<220>

<221> mat_peptide

<222> 1..555

<400> 23

| | |
|---|-----|
| atg ttg ggt aag gtc atc gat acc ctt aca tgc ggc ttc gcc gac ctc | 48 |
| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg | 96 |
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca | 144 |

| | | | | | | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|--|-----|
| Ala | Leu | Ala | His | Gly | Val | Arg | Val | Leu | Glu | Asp | Gly | Val | Asn | Tyr | Ala | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | |
| aca | ggg | aat | ttg | ccc | ggt | tgc | tct | ttc | tct | atc | ttc | ctc | ttg | gct | ttg | | 192 |
| Thr | Gly | Asn | Leu | Pro | Gly | Cys | Ser | Phe | Ser | Ile | Phe | Leu | Leu | Ala | Leu | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| ctg | tcc | tgt | ctg | acc | gtt | cca | gct | tcc | gct | tat | gaa | gtg | cgc | aac | gtg | | 240 |
| Leu | Ser | Cys | Leu | Thr | Val | Pro | Ala | Ser | Ala | Tyr | Glu | Val | Arg | Asn | Val | | |
| | 65 | | | | 70 | | | | | 75 | | | | | 80 | | |
| tcc | ggg | atg | tac | cat | gtc | acg | aac | gac | tgc | tcc | aac | tca | agc | att | gtg | | 288 |
| Ser | Gly | Met | Tyr | His | Val | Thr | Asn | Asp | Cys | Ser | Asn | Ser | Ser | Ile | Val | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| tat | gag | gca | gcg | gac | atg | atc | atg | cac | acc | ccc | ggg | tgc | gtg | ccc | tgc | | 336 |
| Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr | Pro | Gly | Cys | Val | Pro | Cys | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| gtt | cgg | gag | aac | aac | tct | tcc | cgc | tgc | tgg | gta | gcg | ctc | acc | ccc | acg | | 384 |
| Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| ctc | gca | gct | agg | aac | gcc | agc | gtc | ccc | acc | acg | aca | ata | cga | cgc | cac | | 432 |
| Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His | | |
| | | 130 | | | | 135 | | | | | 140 | | | | | | |
| gtc | gat | tcc | cag | ctg | ttc | acc | atc | tcg | cct | cgc | cgg | cat | gag | acg | gtg | | 480 |
| Val | Asp | Ser | Gln | Leu | Phe | Thr | Ile | Ser | Pro | Arg | Arg | His | Glu | Thr | Val | | |
| | 145 | | | | 150 | | | | | 155 | | | | | 160 | | |
| cag | gac | tgc | aat | tgc | tca | atc | tat | ccc | ggc | cac | ata | acg | ggt | cac | cgt | | 528 |
| Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | Ile | Thr | Gly | His | Arg | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| atg | gct | tgg | gat | atg | atg | atg | aac | tgg | taatag | | | | | | | | 561 |
| Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp | | | | | | | | | |
| | | | 180 | | | | | 185 | | | | | | | | | |
| <210> 24 | | | | | | | | | | | | | | | | | |
| <211> 185 | | | | | | | | | | | | | | | | | |
| <212> PRT | | | | | | | | | | | | | | | | | |
| <213> Hepatitis C virus | | | | | | | | | | | | | | | | | |
| <400> 24 | | | | | | | | | | | | | | | | | |
| Met | Leu | Gly | Lys | Val | Ile | Asp | Thr | Leu | Thr | Cys | Gly | Phe | Ala | Asp | Leu | | |
| | 1 | | | 5 | | | | | 10 | | | | | 15 | | | |
| Val | Gly | Tyr | Ile | Pro | Leu | Val | Gly | Ala | Pro | Leu | Gly | Gly | Ala | Ala | Arg | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Ala | Leu | Ala | His | Gly | Val | Arg | Val | Leu | Glu | Asp | Gly | Val | Asn | Tyr | Ala | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Thr | Gly | Asn | Leu | Pro | Gly | Cys | Ser | Phe | Ser | Ile | Phe | Leu | Leu | Ala | Leu | | |

| 50 | | | | | 55 | | | | | 60 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Cys | Leu | Thr | Val | Pro | Ala | Ser | Ala | Tyr | Glu | Val | Arg | Asn | Val |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Gly | Met | Tyr | His | Val | Thr | Asn | Asp | Cys | Ser | Asn | Ser | Ser | Ile | Val |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr | Pro | Gly | Cys | Val | Pro | Cys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Val | Asp | Ser | Gln | Leu | Phe | Thr | Ile | Ser | Pro | Arg | Arg | His | Glu | Thr | Val |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | Ile | Thr | Gly | His | Arg |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp | | | | | | | |
| | | | 180 | | | | | 185 | | | | | | | |

<210> 25

<211> 606

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..603

<220>

<221> mat_peptide

<222> 1..600

<400> 25

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| atg | ttg | ggt | aag | gtc | atc | gat | acc | ctt | aca | tgc | ggc | ttc | gcc | gac | ctc | 48 |
| Met | Leu | Gly | Lys | Val | Ile | Asp | Thr | Leu | Thr | Cys | Gly | Phe | Ala | Asp | Leu | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | | |
| gtg | ggg | tac | att | ccg | ctc | gtc | ggc | gcc | ccc | cta | ggg | ggc | gct | gcc | agg | 96 |
| Val | Gly | Tyr | Ile | Pro | Leu | Val | Gly | Ala | Pro | Leu | Gly | Gly | Ala | Ala | Arg | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| gcc | ctg | gcg | cat | ggc | gtc | cgg | gtt | ctg | gag | gac | ggc | gtg | aac | tat | gca | 144 |
| Ala | Leu | Ala | His | Gly | Val | Arg | Val | Leu | Glu | Asp | Gly | Val | Asn | Tyr | Ala | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| aca | ggg | aat | ttg | ccc | ggt | tgc | tct | ttc | tct | atc | ttc | ctc | ttg | gct | ttg | 192 |
| Thr | Gly | Asn | Leu | Pro | Gly | Cys | Ser | Phe | Ser | Ile | Phe | Leu | Leu | Ala | Leu | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |

| | |
|---|-----|
| ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg | 240 |
| Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val | |
| 65 70 75 80 | |

| | |
|---|-----|
| tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg | 288 |
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val | |
| 85 90 95 | |

| | |
|---|-----|
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc | 336 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | |
| 100 105 110 | |

| | |
|---|-----|
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg | 384 |
| Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr | |
| 115 120 125 | |

| | |
|---|-----|
| ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac | 432 |
| Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His | |
| 130 135 140 | |

| | |
|---|-----|
| gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg | 480 |
| Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val | |
| 145 150 155 160 | |

| | |
|---|-----|
| cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt | 528 |
| Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg | |
| 165 170 175 | |

| | |
|---|-----|
| atg gct tgg gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg | 576 |
| Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val | |
| 180 185 190 | |

| | |
|--|-----|
| gta tcg cag ctg ctc cgg atc ctc taatag | 606 |
| Val Ser Gln Leu Leu Arg Ile Leu | |
| 195 200 | |

<210> 26

<211> 200

<212> PRT

<213> Hepatitis C virus

<400> 26

| |
|---|
| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu |
| 1 5 10 15 |

| |
|---|
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg |
| 20 25 30 |

| |
|---|
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala |
| 35 40 45 |

| |
|---|
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu |
| 50 55 60 |

| |
|---|
| Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val |
|---|

| 65 | 70 | 75 | 80 |
|---|-----|-----|-----|
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val | 85 | 90 | 95 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | 100 | 105 | 110 |
| Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr | 115 | 120 | 125 |
| Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His | 130 | 135 | 140 |
| Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val | 145 | 150 | 155 |
| Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg | 165 | 170 | 175 |
| Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val | 180 | 185 | 190 |
| Val Ser Gln Leu Leu Arg Ile Leu | 195 | 200 | |

<210> 27

<211> 636

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..633

<220>

<221> mat_peptide

<222> 1..630

<400> 27

| | |
|---|-----|
| atg ttg ggt aag gtc atc gat acc ctt aca tgc ggc ttc gcc gac ctc | 48 |
| Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg | 96 |
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca | 144 |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | |
| 35 40 45 | |
| aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg | 192 |
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu | |
| 50 55 60 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ctg | tcc | tgt | ctg | acc | gtt | cca | gct | tcc | gct | tat | gaa | gtg | cgc | aac | gtg | 240 |
| Leu | Ser | Cys | Leu | Thr | Val | Pro | Ala | Ser | Ala | Tyr | Glu | Val | Arg | Asn | Val | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| tcc | ggg | atg | tac | cat | gtc | acg | aac | gac | tgc | tcc | aac | tca | agc | att | gtg | 288 |
| Ser | Gly | Met | Tyr | His | Val | Thr | Asn | Asp | Cys | Ser | Asn | Ser | Ser | Ile | Val | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| tat | gag | gca | gcg | gac | atg | atc | atg | cac | acc | ccc | ggg | tgc | gtg | ccc | tgc | 336 |
| Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr | Pro | Gly | Cys | Val | Pro | Cys | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gtt | cgg | gag | aac | aac | tct | tcc | cgc | tgc | tgg | gta | gcg | ctc | acc | ccc | acg | 384 |
| Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ctc | gca | gct | agg | aac | gcc | agc | gtc | ccc | acc | acg | aca | ata | cga | cgc | cac | 432 |
| Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His | |
| | | 130 | | | | 135 | | | | | 140 | | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gtc | gat | tcc | cag | ctg | ttc | acc | atc | tcg | cct | cgc | cgg | cat | gag | acg | gtg | 480 |
| Val | Asp | Ser | Gln | Leu | Phe | Thr | Ile | Ser | Pro | Arg | Arg | His | Glu | Thr | Val | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| cag | gac | tgc | aat | tgc | tca | atc | tat | ccc | ggc | cac | ata | acg | ggt | cac | cgt | 528 |
| Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | Ile | Thr | Gly | His | Arg | |
| | | | 165 | | | | | 170 | | | | | | 175 | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| atg | gct | tgg | gat | atg | atg | atg | aac | tgg | tcg | cct | aca | acg | gcc | ctg | gtg | 576 |
| Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp | Ser | Pro | Thr | Thr | Ala | Leu | Val | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gta | tcg | cag | ctg | ctc | cgg | atc | gtg | atc | gag | ggc | aga | cac | cat | cac | cac | 624 |
| Val | Ser | Gln | Leu | Leu | Arg | Ile | Val | Ile | Glu | Gly | Arg | His | His | His | His | |
| | | 195 | | | | 200 | | | | | 205 | | | | | |

| | | | | | | | | | | | | | | | | |
|-------|-----|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|
| cat | cac | taatag | | | | | | | | | | | | | | 636 |
| His | His | | | | | | | | | | | | | | | |
| | | 210 | | | | | | | | | | | | | | |
| <210> | 28 | | | | | | | | | | | | | | | |

<211> 210
 <212> PRT
 <213> Hepatitis C virus

<400> 28

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Gly | Lys | Val | Ile | Asp | Thr | Leu | Thr | Cys | Gly | Phe | Ala | Asp | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Val | Gly | Tyr | Ile | Pro | Leu | Val | Gly | Ala | Pro | Leu | Gly | Gly | Ala | Ala | Arg | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Ala | Leu | Ala | His | Gly | Val | Arg | Val | Leu | Glu | Asp | Gly | Val | Asn | Tyr | Ala | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu
 50 55 60
 Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val
 65 70 75 80
 Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val
 85 90 95
 Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys
 100 105 110
 Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr
 115 120 125
 Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His
 130 135 140
 Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val
 145 150 155 160
 Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg
 165 170 175
 Met Ala Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val
 180 185 190
 Val Ser Gln Leu Leu Arg Ile Val Ile Glu Gly Arg His His His His
 195 200 205
 His His
 210

<210> 29

<211> 630

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..627

<220>

<221> mat_peptide

<222> 1..624

<400> 29

atg ggt aag gtc atc gat acc ctt acg tgc gga ttc gcc gat ctc atg
 Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
 1 5 10 15
 ggg tac atc ccg ctc gtc ggc gct ccc gta gga ggc gtc gca aga gcc
 Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala
 20 25 30

48

96

ctt gcg cat ggc gtg agg gcc ctt gaa gac ggg ata aat ttc gca aca 144
Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr
35 40 45

tct tgc tta att cat cca gca gct agt cta gag tgg cgg aat acg tct 240
Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser
65 70 75 80

gag gcc gat gac gtt att ctg cac aca ccc ggc tgc ata cct tgt gtc 336
Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val
100 105 110

gca gtc aag tac gtc gga gca acc acc gct tcg ata cgc agt cat gtg 432
Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val
130 135 140

gac atg tgt ggg gct gtc ttc ctc gtg gga caa gcc ttc acg ttc aga 528
Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg
165 170 175

ggc cat ctt tca gga cat cga atg gct tgg gat atg atg atg aac tgg 624
Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
195 200 205

<210> 30

Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
1 5 10 15

Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala
 20 25 30
 Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr
 35 40 45
 Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe
 50 55 60
 Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser
 65 70 75 80
 Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr
 85 90 95
 Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val
 100 105 110
 Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val
 115 120 125
 Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val
 130 135 140
 Asp Leu Leu Val Gly Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly
 145 150 155 160
 Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg
 165 170 175
 Pro Arg Arg His Gln Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro
 180 185 190
 Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
 195 200 205

<210> 31

<211> 630

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..627

<220>

<221> mat_peptide

<222> 1..624

<400> 31

atg ggt aag gtc atc gat acc cta acg tgc gga ttc gcc gat ctc atg
 Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
 1 5 10 15

48

ggg tat atc ccg ctc gta ggc ggc ccc att ggg ggc gtc gca agg gct

96

| | |
|---|-----|
| Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala | |
| 20 25 30 | |
| ctc gca cac ggt gtg agg gtc ctt gag gac ggg gta aac tat gca aca | 144 |
| Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr | |
| 35 40 45 | |
| ggg aat tta ccc ggt tgc tct ttc tct atc ttt att ctt gct ctt ctc | 192 |
| Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu | |
| 50 55 60 | |
| tgc tgt ctg acc gtt ccg gcc tct gca gtt ccc tac cga aat gcc tct | 240 |
| Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser | |
| 65 70 75 80 | |
| ggg att tat cat gtt acc aat gat tgc cca aac tct tcc ata gtc tat | 288 |
| Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr | |
| 85 90 95 | |
| gag gca gat aac ctg atc cta cac gca cct ggt tgc gtg cct tgt gtc | 336 |
| Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val | |
| 100 105 110 | |
| atg aca ggt aat gtg agt aga tgc tgg gtc caa att acc cct aca ctg | 384 |
| Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu | |
| 115 120 125 | |
| tca gcc ccg agc ctc gga gca gtc acg gct cct ctt cgg aga gcc gtt | 432 |
| Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val | |
| 130 135 140 | |
| gac tac cta gcg gga ggg gct gcc ctc tgc tcc gcg tta tac gta gga | 480 |
| Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly | |
| 145 150 155 160 | |
| gac gcg tgt ggg gca cta ttc ttg gta ggc caa atg ttc acc tat agg | 528 |
| Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg | |
| 165 170 175 | |
| cct cgc cag cac gct acg gtg cag aac tgc aac tgt tcc att tac agt | 576 |
| Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser | |
| 180 185 190 | |
| ggc cat gtt acc ggc cac cgg atg gca tgg gat atg atg atg aac tgg | 624 |
| Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp | |
| 195 200 205 | |
| taatag | 630 |

<210> 32

<211> 208

<212> PRT

<213> Hepatitis C virus

<400> 32

Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met
 1 5 10 15
 Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala
 20 25 30
 Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr
 35 40 45
 Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu
 50 55 60
 Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser
 65 70 75 80
 Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr
 85 90 95
 Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val
 100 105 110
 Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu
 115 120 125
 Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val
 130 135 140
 Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly
 145 150 155 160
 Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg
 165 170 175
 Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser
 180 185 190
 Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp
 195 200 205

<210> 33

<211> 23

<212> DNA

<213> Hepatitis C virus

<400> 33

tgggatatga tgatgaactg gtc

23

<210> 34

<211> 30

<212> DNA

<213> Hepatitis C virus

<400> 34

ctattatggg ggtaagccac agagcaggag

30

<210> 35

<211> 1476

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..1473

<220>

<221> mat_peptide

<222> 1..1470

<400> 35

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| tgg | gat | atg | atg | atg | aac | tgg | tcg | cct | aca | acg | gcc | ctg | gtg | gta | tcg | 48 |
| Trp | Asp | Met | Met | Met | Asn | Trp | Ser | Pro | Thr | Thr | Ala | Leu | Val | Val | Ser | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| cag | ctg | ctc | cgg | atc | cca | caa | gct | gtc | gtg | gac | atg | gtg | gcg | ggg | gcc | 96 |
| Gln | Leu | Leu | Arg | Ile | Pro | Gln | Ala | Val | Val | Asp | Met | Val | Ala | Gly | Ala | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| cat | tgg | gga | gtc | ctg | gcg | ggc | ctc | gcc | tac | tat | tcc | atg | gtg | ggg | aac | 144 |
| His | Trp | Gly | Val | Leu | Ala | Gly | Leu | Ala | Tyr | Tyr | Ser | Met | Val | Gly | Asn | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| tgg | gct | aag | gtt | ttg | gtt | gtg | atg | cta | ctc | ttt | gcc | ggc | gtc | gac | ggg | 192 |
| Trp | Ala | Lys | Val | Leu | Val | Val | Met | Leu | Leu | Phe | Ala | Gly | Val | Asp | Gly | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| cat | acc | cgc | gtg | tca | gga | ggg | gca | gca | gcc | tcc | gat | acc | agg | ggc | ctt | 240 |
| His | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | |
| | 65 | | | | 70 | | | | 75 | | | | | | 80 | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| gtg | tcc | ctc | ttt | agc | ccc | ggg | tcg | gct | cag | aaa | atc | cag | ctc | gta | aac | 288 |
| Val | Ser | Leu | Phe | Ser | Pro | Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | |
| | | | | 85 | | | | 90 | | | | | | 95 | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| acc | aac | ggc | agt | tgg | cac | atc | aac | agg | act | gcc | ctg | aac | tgc | aac | gac | 336 |
| Thr | Asn | Gly | Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| tcc | ctc | caa | aca | ggg | ttc | ttt | gcc | gca | cta | ttc | tac | aaa | cac | aaa | ttc | 384 |
| Ser | Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| aac | tcg | tct | gga | tgc | cca | gag | cgc | ttg | gcc | agc | tgt | cgc | tcc | atc | gac | 432 |
| Asn | Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | |
| | 130 | | | | | 135 | | | | 140 | | | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| aag | ttc | gct | cag | ggg | tgg | ggt | ccc | ctc | act | tac | act | gag | cct | aac | agc | 480 |
| Lys | Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | |

| | | | | | | | |
|---|------|-----|--|-----|--|-----|--|
| 145 | | 150 | | 155 | | 160 | |
| tcg gac cag agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt | 528 | | | | | | |
| Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly | | | | | | | |
| 165 | | 170 | | 175 | | | |
| att gta ccc gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg | 576 | | | | | | |
| Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro | | | | | | | |
| 180 | | 185 | | 190 | | | |
| agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat | 624 | | | | | | |
| Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr | | | | | | | |
| 195 | | 200 | | 205 | | | |
| aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc aac aac acg cgg | 672 | | | | | | |
| Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg | | | | | | | |
| 210 | | 215 | | 220 | | | |
| ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg | 720 | | | | | | |
| Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly | | | | | | | |
| 225 | | 230 | | 235 | | 240 | |
| ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc | 768 | | | | | | |
| Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly | | | | | | | |
| 245 | | 250 | | 255 | | | |
| aac aac acc ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag | 816 | | | | | | |
| Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu | | | | | | | |
| 260 | | 265 | | 270 | | | |
| gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt | 864 | | | | | | |
| Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys | | | | | | | |
| 275 | | 280 | | 285 | | | |
| atg gtt cat tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac | 912 | | | | | | |
| Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn | | | | | | | |
| 290 | | 295 | | 300 | | | |
| ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg | 960 | | | | | | |
| Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg | | | | | | | |
| 305 | | 310 | | 315 | | 320 | |
| ttc gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag | 1008 | | | | | | |
| Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu | | | | | | | |
| 325 | | 330 | | 335 | | | |
| gac agg gat aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag | 1056 | | | | | | |
| Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu | | | | | | | |
| 340 | | 345 | | 350 | | | |
| tgg cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc | 1104 | | | | | | |
| Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr | | | | | | | |
| 355 | | 360 | | 365 | | | |
| ggc ctg atc cac ctc cat cag aac atc gtg gac gtg caa tac ctg tac | 1152 | | | | | | |
| Gly Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr | | | | | | | |
| 370 | | 375 | | 380 | | | |

| | |
|---|------|
| ggt gta ggg tcg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc | 1200 |
| Gly Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val | |
| 385 390 395 400 | |

| | |
|---|------|
| ctg ttg ctc ttc ctt ctc ctg gca gac gcg cgc atc tgc gcc tgc tta | 1248 |
| Leu Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu | |
| 405 410 415 | |

| | |
|---|------|
| tgg atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg | 1296 |
| Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu | |
| 420 425 430 | |

| | |
|---|------|
| gtg gtc ctc aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc | 1344 |
| Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser | |
| 435 440 445 | |

| | |
|---|------|
| ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc | 1392 |
| Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val | |
| 450 455 460 | |

| | |
|---|------|
| cct ggt gcg gca tac gcc ttc tat ggc gtg tgg ccg ctg ctc ctg ctt | 1440 |
| Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu | |
| 465 470 475 480 | |

| | |
|--|------|
| ctg ctg gcc tta cca cca cga gct tat gcc tagtaa | 1476 |
| Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala | |
| 485 490 | |

<210> 36

<211> 490

<212> PRT

<213> Hepatitis C virus

<400> 36

| |
|---|
| Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser |
| 1 5 10 15 |

| |
|---|
| Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala |
| 20 25 30 |

| |
|---|
| His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn |
| 35 40 45 |

| |
|---|
| Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly |
| 50 55 60 |

| |
|---|
| His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu |
| 65 70 75 80 |

| |
|---|
| Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn |
| 85 90 95 |

| |
|---|
| Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp |
| 100 105 110 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asn | Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Lys | Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ser | Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Ile | Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ser | Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Asn | Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Pro | Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | Lys | His | Pro | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | Thr | Pro | Arg | Cys |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Met | Val | His | Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | Pro | Cys | Thr | Val | Asn |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Phe | Thr | Ile | Phe | Lys | Val | Arg | Met | Tyr | Val | Gly | Gly | Val | Glu | His | Arg |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Phe | Glu | Ala | Ala | Cys | Asn | Trp | Thr | Arg | Gly | Glu | Arg | Cys | Asp | Leu | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asp | Arg | Asp | Arg | Ser | Glu | Leu | Ser | Pro | Leu | Leu | Leu | Ser | Thr | Thr | Glu |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Trp | Gln | Ile | Leu | Pro | Cys | Ser | Phe | Thr | Thr | Leu | Pro | Ala | Leu | Ser | Thr |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Gly | Leu | Ile | His | Leu | His | Gln | Asn | Ile | Val | Asp | Val | Gln | Tyr | Leu | Tyr |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Gly | Val | Gly | Ser | Ala | Val | Val | Ser | Leu | Val | Ile | Lys | Trp | Glu | Tyr | Val |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Leu | Leu | Leu | Phe | Leu | Leu | Leu | Ala | Asp | Ala | Arg | Ile | Cys | Ala | Cys | Leu |
| | | | | 405 | | | | 410 | | | | | | 415 | |

Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu
420 425 430

Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser
435 440 445

Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val
450 455 460

Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu
465 470 475 480

Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
485 490

<210> 37

<211> 1021

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1018

<220>

<221> mat_peptide

<222> 2..1015

<400> 37

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Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly
1 5 10 15

gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag 94
Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys
20 25 30

gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc 142
Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg
35 40 45

gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc 190
Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu
50 55 60

ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc 238
Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly
65 70 75

agt tgg cac atc aac agg act gcc ctg aac tgc aac gac tcc ctc caa 286
Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln
80 85 90 95

aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc aac tcg tct 334

| | |
|---|------|
| Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser | |
| 100 105 110 | |
| gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac aag ttc gct | 382 |
| Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala | |
| 115 120 125 | |
| cag ggg tgg ggt ccc ctc act tac act gag cct aac agc tcg gac cag | 430 |
| Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln | |
| 130 135 140 | |
| agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt att gta ccc | 478 |
| Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro | |
| 145 150 155 | |
| gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg agc cct gtt | 526 |
| Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val | |
| 160 165 170 175 | |
| gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat aac tgg ggg | 574 |
| Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly | |
| 180 185 190 | |
| gcg aac gac tcg gat gtg ctg att ctc aac aac acg cgg ccg ccg cga | 622 |
| Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg | |
| 195 200 205 | |
| ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg ttc acc aag | 670 |
| Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys | |
| 210 215 220 | |
| acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac aac acc | 718 |
| Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr | |
| 225 230 235 | |
| ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag gcc acc tac | 766 |
| Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr | |
| 240 245 250 255 | |
| gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt atg gtt cat | 814 |
| Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His | |
| 260 265 270 | |
| tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac ttc acc atc | 862 |
| Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile | |
| 275 280 285 | |
| ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc gaa gcc | 910 |
| Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala | |
| 290 295 300 | |
| gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac agg gat | 958 |
| Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp | |
| 305 310 315 | |
| aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag tgg cag agt | 1006 |
| Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ser | |
| 320 325 330 335 | |

ggc aga gct taatta
Gly Arg Ala

1021

<210> 38

<211> 338

<212> PRT

<213> Hepatitis C virus

<400> 38

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Pro | Gln | Ala | Val | Val | Asp | Met | Val | Ala | Gly | Ala | His | Trp | Gly | Val | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Leu | Ala | Gly | Leu | Ala | Tyr | Tyr | Ser | Met | Val | Gly | Asn | Trp | Ala | Lys | Val | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Leu | Val | Val | Met | Leu | Leu | Phe | Ala | Gly | Val | Asp | Gly | His | Thr | Arg | Val | |
| | | | 35 | | | | 40 | | | | | 45 | | | | |
| Ser | Gly | Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | Val | Ser | Leu | Phe | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ser | Pro | Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | Thr | Asn | Gly | Ser | |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 | |
| Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | Leu | Gln | Thr | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr | Asn | Trp | Gly | Ala | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg | Pro | Pro | Arg | Gly | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly | Phe | Thr | Lys | Thr | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly | Asn | Asn | Thr | Leu | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |

Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala
 245 250 255
 Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr
 260 265 270
 Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe
 275 280 285
 Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala
 290 295 300
 Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg
 305 310 315 320
 Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ser Gly
 325 330 335
 Arg Ala

<210> 39

<211> 1034

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1032

<220>

<221> mat_peptide

<222> 2..1029

<400> 39

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|---|-----|
| g atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga | 46 |
| Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly | |
| 1 5 10 15 | |
| gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag | 94 |
| Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys | |
| 20 25 30 | |
| gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc | 142 |
| Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg | |
| 35 40 45 | |
| gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc | 190 |
| Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu | |
| 50 55 60 | |
| ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc | 238 |
| Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly | |

| 65 | | | | | 70 | | | | | 75 | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| agt | tgg | cac | atc | aac | agg | act | gcc | ctg | aac | tgc | aac | gac | tcc | ctc | caa | 286 |
| Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | Leu | Gln | |
| 80 | | | | | 85 | | | | | 90 | | | | | 95 | |
| aca | ggg | ttc | ttt | gcc | gca | cta | ttc | tac | aaa | cac | aaa | ttc | aac | tcg | tct | 334 |
| Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | |
| | | | | 100 | | | | | 105 | | | | | 110 | | |
| gga | tgc | cca | gag | cgc | ttg | gcc | agc | tgt | cgc | tcc | atc | gac | aag | ttc | gct | 382 |
| Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | Phe | Ala | |
| | | | 115 | | | | | 120 | | | | | 125 | | | |
| cag | ggg | tgg | ggt | ccc | ctc | act | tac | act | gag | cct | aac | agc | tcg | gac | cag | 430 |
| Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | Asp | Gln | |
| | | 130 | | | | | 135 | | | | | 140 | | | | |
| agg | ccc | tac | tgc | tgg | cac | tac | gcg | cct | cga | ccg | tgt | ggt | att | gta | ccc | 478 |
| Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | Val | Pro | |
| | 145 | | | | | 150 | | | | | 155 | | | | | |
| gcg | tct | cag | gtg | tgc | ggt | cca | gtg | tat | tgc | ttc | acc | ccg | agc | cct | gtt | 526 |
| Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val | |
| 160 | | | | 165 | | | | | 170 | | | | | | 175 | |
| gtg | gtg | ggg | acg | acc | gat | cgg | ttt | ggt | gtc | ccc | acg | tat | aac | tgg | ggg | 574 |
| Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr | Asn | Trp | Gly | |
| | | | | 180 | | | | | 185 | | | | | 190 | | |
| gcg | aac | gac | tcg | gat | gtg | ctg | att | ctc | aac | aac | acg | cgg | ccg | ccg | cga | 622 |
| Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg | Pro | Pro | Arg | |
| | | | 195 | | | | | 200 | | | | | 205 | | | |
| ggc | aac | tgg | ttc | ggc | tgt | aca | tgg | atg | aat | ggc | act | ggg | ttc | acc | aag | 670 |
| Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly | Phe | Thr | Lys | |
| | | 210 | | | | | 215 | | | | | 220 | | | | |
| acg | tgt | ggg | ggc | ccc | ccg | tgc | aac | atc | ggg | ggg | gcc | ggc | aac | aac | acc | 718 |
| Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly | Asn | Asn | Thr | |
| | 225 | | | | | 230 | | | | | 235 | | | | | |
| ttg | acc | tgc | ccc | act | gac | tgt | ttt | cgg | aag | cac | ccc | gag | gcc | acc | tac | 766 |
| Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | Lys | His | Pro | Glu | Ala | Thr | Tyr | |
| 240 | | | | | 245 | | | | 250 | | | | | 255 | | |
| gcc | aga | tgc | ggt | tct | ggg | ccc | tgg | ctg | aca | cct | agg | tgt | atg | gtt | cat | 814 |
| Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | Thr | Pro | Arg | Cys | Met | Val | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | | |
| tac | cca | tat | agg | ctc | tgg | cac | tac | ccc | tgc | act | gtc | aac | ttc | acc | atc | 862 |
| Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | Pro | Cys | Thr | Val | Asn | Phe | Thr | Ile | |
| | | | 275 | | | | | 280 | | | | | 285 | | | |
| ttc | aag | gtt | agg | atg | tac | gtg | ggg | ggc | gtg | gag | cac | agg | ttc | gaa | gcc | 910 |
| Phe | Lys | Val | Arg | Met | Tyr | Val | Gly | Gly | Val | Glu | His | Arg | Phe | Glu | Ala | |
| | | 290 | | | | | 295 | | | | | 300 | | | | |

| | |
|---|-----|
| gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac agg gat | 958 |
| Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp | |
| 305 310 315 | |

| | |
|---|------|
| aga tca gag ctt agc ccg ctg ctg ctg tct aca aca ggt gat cga ggg | 1006 |
| Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Gly Asp Arg Gly | |
| 320 325 330 335 | |

| | |
|---------------------------------------|------|
| cag aca cca tca cca cca tca cta at ag | 1034 |
| Gln Thr Pro Ser Pro Pro Ser Leu | |
| 340 | |

<210> 40

<211> 343

<212> PRT

<213> Hepatitis C virus

<400> 40

| |
|---|
| Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val |
| 1 5 10 15 |

| |
|---|
| Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val |
| 20 25 30 |

| |
|---|
| Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val |
| 35 40 45 |

| |
|---|
| Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe |
| 50 55 60 |

| |
|---|
| Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser |
| 65 70 75 80 |

| |
|---|
| Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr |
| 85 90 95 |

| |
|---|
| Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly |
| 100 105 110 |

| |
|---|
| Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln |
| 115 120 125 |

| |
|---|
| Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg |
| 130 135 140 |

| |
|---|
| Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala |
| 145 150 155 160 |

| |
|---|
| Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val |
| 165 170 175 |

| |
|---|
| Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala |
| 180 185 190 |

| |
|---|
| Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly |
| 195 200 205 |

Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr
 210 215 220
 Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu
 225 230 235 240
 Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala
 245 250 255
 Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr
 260 265 270
 Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe
 275 280 285
 Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala
 290 295 300
 Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg
 305 310 315 320
 Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Gly Asp Arg Gly Gln
 325 330 335
 Thr Pro Ser Pro Pro Ser Leu
 340

<210> 41

<211> 945

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..942

<220>

<221> mat_peptide

<222> 1..939

<400> 41

| | |
|---|-----|
| atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc | 48 |
| Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala | |
| 1 5 10 15 | |
| ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc gat | 96 |
| Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp | |
| 20 25 30 | |
| acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc | 144 |
| Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile | |
| 35 40 45 | |
| cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc ctg | 192 |
| Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu | |

| 50 | 55 | 60 | |
|---|-----|-----|-----|
| aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac | | | 240 |
| Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr | | | |
| 65 | 70 | 75 | 80 |
| aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt | | | 288 |
| Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys | | | |
| | 85 | 90 | 95 |
| cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac act | | | 336 |
| Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr | | | |
| | 100 | 105 | 110 |
| gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg cct | | | 384 |
| Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro | | | |
| | 115 | 120 | 125 |
| cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg tat | | | 432 |
| Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr | | | |
| | 130 | 135 | 140 |
| tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt | | | 480 |
| Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly | | | |
| 145 | 150 | 155 | 160 |
| gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc | | | 528 |
| Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu | | | |
| | 165 | 170 | 175 |
| aac aac acg cgg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg | | | 576 |
| Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met | | | |
| | 180 | 185 | 190 |
| aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc | | | 624 |
| Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile | | | |
| | 195 | 200 | 205 |
| ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt cgg | | | 672 |
| Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg | | | |
| | 210 | 215 | 220 |
| aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg | | | 720 |
| Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu | | | |
| 225 | 230 | 235 | 240 |
| aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac ccc | | | 768 |
| Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro | | | |
| | 245 | 250 | 255 |
| tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc | | | 816 |
| Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly | | | |
| | 260 | 265 | 270 |
| gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag cgt | | | 864 |
| Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg | | | |
| | 275 | 280 | 285 |

| | |
|---|-----|
| tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg ctg | 912 |
| Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu | |
| 290 295 300 | |

| | |
|---|-----|
| tct aca aca gag tgg cag agc tta att aat tag | 945 |
| Ser Thr Thr Glu Trp Gln Ser Leu Ile Asn | |
| 305 310 | |

<210> 42

<211> 314

<212> PRT

<213> Hepatitis C virus

<400> 42

| |
|---|
| Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala |
| 1 5 10 15 |

| |
|---|
| Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp |
| 20 25 30 |

| |
|---|
| Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile |
| 35 40 45 |

| |
|---|
| Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu |
| 50 55 60 |

| |
|---|
| Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr |
| 65 70 75 80 |

| |
|---|
| Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys |
| 85 90 95 |

| |
|---|
| Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr |
| 100 105 110 |

| |
|---|
| Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro |
| 115 120 125 |

| |
|---|
| Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr |
| 130 135 140 |

| |
|---|
| Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly |
| 145 150 155 160 |

| |
|---|
| Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu |
| 165 170 175 |

| |
|---|
| Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met |
| 180 185 190 |

| |
|---|
| Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile |
| 195 200 205 |

| |
|---|
| Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg |
| 210 215 220 |

Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu
 225 230 235 240
 Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro
 245 250 255
 Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly
 260 265 270
 Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg
 275 280 285
 Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu
 290 295 300
 Ser Thr Thr Glu Trp Gln Ser Leu Ile Asn
 305 310

<210> 43

<211> 961

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..958

<220>

<221> mat_peptide

<222> 1..955

<400> 43

| | |
|---|-----|
| atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc | 48 |
| Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala | |
| 1 5 10 15 | |
| ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc gat | 96 |
| Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp | |
| 20 25 30 | |
| acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc | 144 |
| Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile | |
| 35 40 45 | |
| cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc ctg | 192 |
| Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu | |
| 50 55 60 | |
| aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac | 240 |
| Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr | |
| 65 70 75 80 | |
| aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt | 288 |
| Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys | |

| 85 | | | | | | | | | | 90 | | | | | 95 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| cg | tc | at | ga | aa | tt | gc | ca | gg | tg | gg | cc | ct | ac | ta | ac | 336 | | | | |
| Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | | | | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | | | | |
| ga | cc | aa | ag | tc | ga | ca | ag | cc | ta | tg | tg | ca | ta | gc | cc | 384 | | | | |
| Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | | | | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | | | | |
| cg | cc | tg | gg | at | gt | cc | gc | tc | ca | gt | tg | gg | cc | gt | ta | 432 | | | | |
| Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | | | | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | | | | |
| tg | tt | ac | cc | ag | cc | gt | gt | gg | ac | ac | ga | cg | tt | gg | | 480 | | | | |
| Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | | | | | |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 | | | | | |
| gt | cc | ac | ta | aa | tg | gg | gc | aa | ga | tc | ga | gt | ct | at | ct | 528 | | | | |
| Val | Pro | Thr | Tyr | Asn | Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | | | | | |
| | | | | 165 | | | | 170 | | | | | | 175 | | | | | | |
| aa | aa | ac | cg | cc | cc | cg | ga | gg | aa | tg | tt | gg | tg | aa | tg | 576 | | | | |
| Asn | Asn | Thr | Arg | Pro | Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | | | | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | | | | |
| aa | gg | ac | gg | tt | ac | aa | ac | tg | gg | gg | cc | cc | tg | aa | at | 624 | | | | |
| Asn | Gly | Thr | Gly | Phe | Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | | | | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | | | | |
| gg | gg | gc | gg | aa | aa | ac | tt | ac | tg | cc | ac | ga | tg | tt | cg | 672 | | | | |
| Gly | Gly | Ala | Gly | Asn | Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | | | | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | | | | |
| aa | ca | cc | ga | gc | ac | ta | gc | ag | tg | gg | tc | gg | cc | tg | ct | 720 | | | | |
| Lys | His | Pro | Glu | Ala | Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | | | | | |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 | | | | | |
| aa | cc | ag | tg | at | gt | ca | ta | cc | ta | ag | ct | tg | ca | ta | cc | 768 | | | | |
| Thr | Pro | Arg | Cys | Met | Val | His | Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | Pro | | | | | |
| | | | | 245 | | | | 250 | | | | | | 255 | | | | | | |
| tg | ac | gt | aa | tt | ac | at | tt | aa | gt | ag | at | ta | gt | gg | gg | 816 | | | | |
| Cys | Thr | Val | Asn | Phe | Thr | Ile | Phe | Lys | Val | Arg | Met | Tyr | Val | Gly | Gly | | | | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | | | | |
| gt | ga | ca | ag | tt | ga | gc | ga | tg | aa | tg | ac | cg | ga | ga | cg | 864 | | | | |
| Val | Glu | His | Arg | Phe | Glu | Ala | Ala | Cys | Asn | Trp | Thr | Arg | Gly | Glu | Arg | | | | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | | | | |
| tg | ga | tt | ga | ga | ag | ga | ga | ta | ga | ct | ag | cc | ct | ct | ct | 912 | | | | |
| Cys | Asp | Leu | Glu | Asp | Arg | Asp | Arg | Ser | Glu | Leu | Ser | Pro | Leu | Leu | Leu | | | | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | | | | |
| tc | aa | aa | gg | ga | cg | gg | ca | aa | cc | ta | cc | cc | ta | ct | a | 958 | | | | |
| Ser | Thr | Thr | Gly | Asp | Arg | Gly | Gln | Thr | Pro | Ser | Pro | Pro | Ser | Leu | | | | | | |
| 305 | | | | | 310 | | | | 315 | | | | | | | | | | | |

tag

<210> 44

<211> 319

<212> PRT

<213> Hepatitis C virus

<400> 44

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Gly | Asn | Trp | Ala | Lys | Val | Leu | Val | Val | Met | Leu | Leu | Phe | Ala | 1 | 5 | 10 | 15 |
| Gly | Val | Asp | Gly | His | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Ala | Ser | Asp | 20 | 25 | 30 | |
| Thr | Arg | Gly | Leu | Val | Ser | Leu | Phe | Ser | Pro | Gly | Ser | Ala | Gln | Lys | Ile | 35 | 40 | 45 | |
| Gln | Leu | Val | Asn | Thr | Asn | Gly | Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | 50 | 55 | 60 | |
| Asn | Cys | Asn | Asp | Ser | Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | 65 | 70 | 75 | 80 |
| Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | 85 | 90 | 95 | |
| Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | 100 | 105 | 110 | |
| Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | 115 | 120 | 125 | |
| Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | 130 | 135 | 140 | |
| Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | 145 | 150 | 155 | 160 |
| Val | Pro | Thr | Tyr | Asn | Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | 165 | 170 | 175 | |
| Asn | Asn | Thr | Arg | Pro | Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | 180 | 185 | 190 | |
| Asn | Gly | Thr | Gly | Phe | Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | 195 | 200 | 205 | |
| Gly | Gly | Ala | Gly | Asn | Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | 210 | 215 | 220 | |
| Lys | His | Pro | Glu | Ala | Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | 225 | 230 | 235 | 240 |
| Thr | Pro | Arg | Cys | Met | Val | His | Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | Pro | | | | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| | | | 245 | | | | | | 250 | | | | | | 255 | | | |
| Cys | Thr | Val | Asn | Phe | Thr | Ile | Phe | Lys | Val | Arg | Met | Tyr | Val | Gly | Gly | | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Val | Glu | His | Arg | Phe | Glu | Ala | Ala | Cys | Asn | Trp | Thr | Arg | Gly | Glu | Arg | | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | | |
| Cys | Asp | Leu | Glu | Asp | Arg | Asp | Arg | Ser | Glu | Leu | Ser | Pro | Leu | Leu | Leu | | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | | |
| Ser | Thr | Thr | Gly | Asp | Arg | Gly | Gln | Thr | Pro | Ser | Pro | Pro | Ser | Leu | | | | |
| 305 | | | | | 310 | | | | | 315 | | | | | | | | |

<210> 45

<211> 1395

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..1392

<220>

<221> mat_peptide

<222> 1..1389

<400> 45

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
| atg | gtg | gcg | ggg | gcc | cat | tgg | gga | gtc | ctg | gcg | ggc | ctc | gcc | tac | tat | | 48 |
| Met | Val | Ala | Gly | Ala | His | Trp | Gly | Val | Leu | Ala | Gly | Leu | Ala | Tyr | Tyr | | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | | | |
| tcc | atg | gtg | ggg | aac | tgg | gct | aag | gtt | ttg | gtt | gtg | atg | cta | ctc | ttt | | 96 |
| Ser | Met | Val | Gly | Asn | Trp | Ala | Lys | Val | Leu | Val | Val | Met | Leu | Leu | Phe | | |
| | | | 20 | | | | 25 | | | | | | 30 | | | | |
| gcc | ggc | gtc | gac | ggg | cat | acc | cgc | gtg | tca | gga | ggg | gca | gca | gcc | tcc | | 144 |
| Ala | Gly | Val | Asp | Gly | His | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Ala | Ser | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | |
| gat | acc | agg | ggc | ctt | gtg | tcc | ctc | ttt | agc | ccc | ggg | tcg | gct | cag | aaa | | 192 |
| Asp | Thr | Arg | Gly | Leu | Val | Ser | Leu | Phe | Ser | Pro | Gly | Ser | Ala | Gln | Lys | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| atc | cag | ctc | gta | aac | acc | aac | ggc | agt | tgg | cac | atc | aac | agg | act | gcc | | 240 |
| Ile | Gln | Leu | Val | Asn | Thr | Asn | Gly | Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | | |
| 65 | | | | 70 | | | | 75 | | | | | | 80 | | | |
| ctg | aac | tgc | aac | gac | tcc | ctc | caa | aca | ggg | ttc | ttt | gcc | gca | cta | ttc | | 288 |
| Leu | Asn | Cys | Asn | Asp | Ser | Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | | |
| | | | | 85 | | | | 90 | | | | | | 95 | | | |
| tac | aaa | cac | aaa | ttc | aac | tcg | tct | gga | tgc | cca | gag | cgc | ttg | gcc | agc | | 336 |
| Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | | |
| | | | 100 | | | | | 105 | | | | | | 110 | | | |

| | |
|---|------|
| tgt cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac | 384 |
| Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr | |
| 115 120 125 | |
| act gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg | 432 |
| Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala | |
| 130 135 140 | |
| cct cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg | 480 |
| Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val | |
| 145 150 155 160 | |
| tat tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt | 528 |
| Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe | |
| 165 170 175 | |
| ggt gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att | 576 |
| Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile | |
| 180 185 190 | |
| ctc aac aac acg cgg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg | 624 |
| Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp | |
| 195 200 205 | |
| atg aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac | 672 |
| Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn | |
| 210 215 220 | |
| atc ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt | 720 |
| Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe | |
| 225 230 235 240 | |
| cgg aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg | 768 |
| Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp | |
| 245 250 255 | |
| ctg aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac | 816 |
| Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr | |
| 260 265 270 | |
| ccc tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg | 864 |
| Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly | |
| 275 280 285 | |
| ggc gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag | 912 |
| Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu | |
| 290 295 300 | |
| cgt tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg | 960 |
| Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu | |
| 305 310 315 320 | |
| ctg tct aca aca gag tgg cag ata ctg ccc tgt tcc ttc acc acc ctg | 1008 |
| Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu | |
| 325 330 335 | |

ccg gcc cta tcc acc ggc ctg atc cac ctc cat cag aac atc gtg gac 1056
 Pro Ala Leu Ser Thr Gly Leu Ile His Leu His Gln Asn Ile Val Asp
 340 345 350

gtg caa tac ctg tac ggt gta ggg tcg gcg gtt gtc tcc ctt gtc atc 1104
 Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val Val Ser Leu Val Ile
 355 360 365

aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc ctg gca gac gcg cgc 1152
 Lys Trp Glu Tyr Val Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg
 370 375 380

atc tgc gcc tgc tta tgg atg atg ctg ctg ata gct caa gct gag gcc 1200
 Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala
 385 390 395 400

gcc tta gag aac ctg gtg gtc ctc aat gcg gcg gcc gtg gcc ggg gcg 1248
 Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala
 405 410 415

cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc 1296
 His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile
 420 425 430

aag ggc agg ctg gtc cct ggt gcg gca tac gcc ttc tat ggc gtg tgg 1344
 Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp
 435 440 445

ccg ctg ctc ctg ctt ctg ctg gcc tta cca cca cga gct tat gcc tagtaa 1395
 Pro Leu Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
 450 455 460

<210> 46

<211> 463

<212> PRT

<213> Hepatitis C virus

<400> 46

Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr
 1 5 10 15

Ser Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe
 20 25 30

Ala Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser
 35 40 45

Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys
 50 55 60

Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala
 65 70 75 80

Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe
 85 90 95

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Cys | Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Thr | Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| Pro | Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | | |
| | | | | 165 | | | | | | 170 | | | | 175 | | | |
| Gly | Val | Pro | Thr | Tyr | Asn | Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Leu | Asn | Asn | Thr | Arg | Pro | Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Met | Asn | Gly | Thr | Gly | Phe | Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | | |
| | 210 | | | | | | 215 | | | | 220 | | | | | | |
| Ile | Gly | Gly | Ala | Gly | Asn | Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Arg | Lys | His | Pro | Glu | Ala | Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Leu | Thr | Pro | Arg | Cys | Met | Val | His | Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| Pro | Cys | Thr | Val | Asn | Phe | Thr | Ile | Phe | Lys | Val | Arg | Met | Tyr | Val | Gly | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gly | Val | Glu | His | Arg | Phe | Glu | Ala | Ala | Cys | Asn | Trp | Thr | Arg | Gly | Glu | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | |
| Arg | Cys | Asp | Leu | Glu | Asp | Arg | Asp | Arg | Ser | Glu | Leu | Ser | Pro | Leu | Leu | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| Leu | Ser | Thr | Thr | Glu | Trp | Gln | Ile | Leu | Pro | Cys | Ser | Phe | Thr | Thr | Leu | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| Pro | Ala | Leu | Ser | Thr | Gly | Leu | Ile | His | Leu | His | Gln | Asn | Ile | Val | Asp | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| Val | Gln | Tyr | Leu | Tyr | Gly | Val | Gly | Ser | Ala | Val | Val | Ser | Leu | Val | Ile | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | |
| Lys | Trp | Glu | Tyr | Val | Leu | Leu | Leu | Phe | Leu | Leu | Leu | Ala | Asp | Ala | Arg | | |
| | 370 | | | | | 375 | | | | | | 380 | | | | | |
| Ile | Cys | Ala | Cys | Leu | Trp | Met | Met | Leu | Leu | Ile | Ala | Gln | Ala | Glu | Ala | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | |

Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala
405 410 415

His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile
420 425 430

Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp
435 440 445

Pro Leu Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala
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| Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu | |
| 1 5 10 15 | |
| gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg | 96 |
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg | |
| 20 25 30 | |
| gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca | 144 |
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala | |
| 35 40 45 | |
| aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg | 192 |
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu | |
| 50 55 60 | |
| ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg | 240 |
| Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val | |
| 65 70 75 80 | |
| tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg | 288 |
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val | |
| 85 90 95 | |
| tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc | 336 |
| Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys | |
| 100 105 110 | |
| gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg | 384 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|
| Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| ctc | gca | gct | agg | aac | gcc | agc | gtc | ccc | acc | acg | aca | ata | cga | cgc | cac | | 432 |
| Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His | | |
| | | 130 | | | | | 135 | | | | | 140 | | | | | |
| gtc | gat | ttg | ctc | gtt | ggg | gcg | gct | gct | ttc | tgt | tcc | gct | atg | tac | gtg | | 480 |
| Val | Asp | Leu | Leu | Val | Gly | Ala | Ala | Ala | Phe | Cys | Ser | Ala | Met | Tyr | Val | | |
| | | 145 | | | | 150 | | | | 155 | | | | | 160 | | |
| ggg | gac | ctc | tgc | gga | tct | gtc | ttc | ctc | gtc | tcc | cag | ctg | ttc | acc | atc | | 528 |
| Gly | Asp | Leu | Cys | Gly | Ser | Val | Phe | Leu | Val | Ser | Gln | Leu | Phe | Thr | Ile | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| tcg | cct | cgc | cgg | cat | gag | acg | gtg | cag | gac | tgc | aat | tgc | tca | atc | tat | | 576 |
| Ser | Pro | Arg | Arg | His | Glu | Thr | Val | Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| ccc | ggc | cac | ata | acg | ggc | cac | cgt | atg | gct | tgg | gat | atg | atg | atg | aac | | 624 |
| Pro | Gly | His | Ile | Thr | Gly | His | Arg | Met | Ala | Trp | Asp | Met | Met | Met | Asn | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| tgg | tcg | cct | aca | acg | gcc | ctg | gtg | gta | tcg | cag | ctg | ctc | cgg | atc | cca | | 672 |
| Trp | Ser | Pro | Thr | Thr | Ala | Leu | Val | Val | Ser | Gln | Leu | Leu | Arg | Ile | Pro | | |
| | | 210 | | | | 215 | | | | | 220 | | | | | | |
| caa | gct | gtc | gtg | gac | atg | gtg | gcg | ggg | gcc | cat | tgg | gga | gtc | ctg | gcg | | 720 |
| Gln | Ala | Val | Val | Asp | Met | Val | Ala | Gly | Ala | His | Trp | Gly | Val | Leu | Ala | | |
| | | 225 | | | 230 | | | | | 235 | | | | | 240 | | |
| ggc | ctc | gcc | tac | tat | tcc | atg | gtg | ggg | aac | tgg | gct | aag | gtt | ttg | gtt | | 768 |
| Gly | Leu | Ala | Tyr | Tyr | Ser | Met | Val | Gly | Asn | Trp | Ala | Lys | Val | Leu | Val | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| gtg | atg | cta | ctc | ttt | gcc | ggc | gtc | gac | ggg | cat | acc | cgc | gtg | tca | gga | | 816 |
| Val | Met | Leu | Leu | Phe | Ala | Gly | Val | Asp | Gly | His | Thr | Arg | Val | Ser | Gly | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| ggg | gca | gca | gcc | tcc | gat | acc | agg | ggc | ctt | gtg | tcc | ctc | ttt | agc | ccc | | 864 |
| Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | Val | Ser | Leu | Phe | Ser | Pro | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | |
| ggg | tcg | gct | cag | aaa | atc | cag | ctc | gta | aac | acc | aac | ggc | agt | tgg | cac | | 912 |
| Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | Thr | Asn | Gly | Ser | Trp | His | | |
| | | 290 | | | | 295 | | | | | 300 | | | | | | |
| atc | aac | agg | act | gcc | ctg | aac | tgc | aac | gac | tcc | ctc | caa | aca | ggg | ttc | | 960 |
| Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | Leu | Gln | Thr | Gly | Phe | | |
| | | 305 | | | 310 | | | | | 315 | | | | | 320 | | |
| ttt | gcc | gca | cta | ttc | tac | aaa | cac | aaa | ttc | aac | tcg | tct | gga | tgc | cca | | 1008 |
| Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | Cys | Pro | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| gag | cgc | ttg | gcc | agc | tgt | cgc | tcc | atc | gac | aag | ttc | gct | cag | ggg | tgg | | 1056 |
| Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | Gly | Trp | | |

| 340 | | | | | | 345 | | | | | | 350 | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|--|
| ggt | ccc | ctc | act | tac | act | gag | cct | aac | agc | tcg | gac | cag | agg | ccc | tac | 1104 | | |
| Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | Pro | Tyr | | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | | |
| tgc | tgg | cac | tac | gcg | cct | cga | ccg | tgt | ggt | att | gta | ccc | gcg | tct | cag | 1152 | | |
| Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | Ser | Gln | | | |
| | 370 | | | | | 375 | | | | 380 | | | | | | | | |
| gtg | tgc | ggt | cca | gtg | tat | tgc | ttc | acc | ccg | agc | cct | gtt | gtg | gtg | ggg | 1200 | | |
| Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | Val | Gly | | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | | |
| acg | acc | gat | cgg | ttt | ggt | gtc | ccc | acg | tat | aac | tgg | ggg | gcg | aac | gac | 1248 | | |
| Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr | Asn | Trp | Gly | Ala | Asn | Asp | | | |
| | | | | 405 | | | | | 410 | | | | | 415 | | | | |
| tcg | gat | gtg | ctg | att | ctc | aac | aac | acg | cgg | ccg | ccg | cga | ggc | aac | tgg | 1296 | | |
| Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg | Pro | Pro | Arg | Gly | Asn | Trp | | | |
| | | | 420 | | | | | 425 | | | | | 430 | | | | | |
| ttc | ggc | tgt | aca | tgg | atg | aat | ggc | act | ggg | ttc | acc | aag | acg | tgt | ggg | 1344 | | |
| Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly | Phe | Thr | Lys | Thr | Cys | Gly | | | |
| | | 435 | | | | | 440 | | | | | 445 | | | | | | |
| ggc | ccc | ccg | tgc | aac | atc | ggg | ggg | gcc | ggc | aac | aac | acc | ttg | acc | tgc | 1392 | | |
| Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly | Asn | Asn | Thr | Leu | Thr | Cys | | | |
| | 450 | | | | | 455 | | | | | 460 | | | | | | | |
| ccc | act | gac | tgt | ttt | cgg | aag | cac | ccc | gag | gcc | acc | tac | gcc | aga | tgc | 1440 | | |
| Pro | Thr | Asp | Cys | Phe | Arg | Lys | His | Pro | Glu | Ala | Thr | Tyr | Ala | Arg | Cys | | | |
| 465 | | | | | 470 | | | | 475 | | | | | | 480 | | | |
| ggt | tct | ggg | ccc | tgg | ctg | aca | cct | agg | tgt | atg | gtt | cat | tac | cca | tat | 1488 | | |
| Gly | Ser | Gly | Pro | Trp | Leu | Thr | Pro | Arg | Cys | Met | Val | His | Tyr | Pro | Tyr | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | |
| agg | ctc | tgg | cac | tac | ccc | tgc | act | gtc | aac | ttc | acc | atc | ttc | aag | gtt | 1536 | | |
| Arg | Leu | Trp | His | Tyr | Pro | Cys | Thr | Val | Asn | Phe | Thr | Ile | Phe | Lys | Val | | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| agg | atg | tac | gtg | ggg | ggc | gtg | gag | cac | agg | ttc | gaa | gcc | gca | tgc | aat | 1584 | | |
| Arg | Met | Tyr | Val | Gly | Gly | Val | Glu | His | Arg | Phe | Glu | Ala | Ala | Cys | Asn | | | |
| | | 515 | | | | 520 | | | | | | 525 | | | | | | |
| tgg | act | cga | gga | gag | cgt | tgt | gac | ttg | gag | gac | agg | gat | aga | tca | gag | 1632 | | |
| Trp | Thr | Arg | Gly | Glu | Arg | Cys | Asp | Leu | Glu | Asp | Arg | Asp | Arg | Ser | Glu | | | |
| | | 530 | | | | 535 | | | | | 540 | | | | | | | |
| ctt | agc | ccg | ctg | ctg | ctg | tct | aca | aca | gag | tgg | cag | ata | ctg | ccc | tgt | 1680 | | |
| Leu | Ser | Pro | Leu | Leu | Leu | Ser | Thr | Thr | Glu | Trp | Gln | Ile | Leu | Pro | Cys | | | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | | | |
| tcc | ttc | acc | acc | ctg | ccg | gcc | cta | tcc | acc | ggc | ctg | atc | cac | ctc | cat | 1728 | | |
| Ser | Phe | Thr | Thr | Leu | Pro | Ala | Leu | Ser | Thr | Gly | Leu | Ile | His | Leu | His | | | |
| | | | | 565 | | | | | 570 | | | | | 575 | | | | |

| | |
|---|------|
| cag aac atc gtg gac gtg caa tac ctg tac ggt gta ggg tcg gcg gtt | 1776 |
| Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val | |
| 580 585 590 | |

| | |
|---|------|
| gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc | 1824 |
| Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu | |
| 595 600 605 | |

| | |
|---|------|
| ctg gca gac gcg cgc atc tgc gcc tgc tta tgg atg atg ctg ctg ata | 1872 |
| Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile | |
| 610 615 620 | |

| | |
|---|------|
| gct caa gct gag gcc gcc tta gag aac ctg gtg gtc ctc aat gcg gcg | 1920 |
| Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala | |
| 625 630 635 640 | |

| | |
|---|------|
| gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt | 1968 |
| Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys | |
| 645 650 655 | |

| | |
|---|------|
| gct gcc tgg tac atc aag ggc agg ctg gtc cct ggt gcg gca tac gcc | 2016 |
| Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala | |
| 660 665 670 | |

| | |
|---|------|
| ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg ctg gcc tta cca cca | 2064 |
| Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu Ala Leu Pro Pro | |
| 675 680 685 | |

| | |
|------------------------|------|
| cga gct tat gcc tagtaa | 2082 |
| Arg Ala Tyr Ala | |
| 690 | |

<210> 48

<211> 692

<212> PRT

<213> Hepatitis C virus

<400> 48

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| Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu |
| 1 5 10 15 |

| |
|---|
| Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg |
| 20 25 30 |

| |
|---|
| Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala |
| 35 40 45 |

| |
|---|
| Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu |
| 50 55 60 |

| |
|---|
| Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val |
| 65 70 75 80 |

| |
|---|
| Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val |
|---|

85

90

95

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr | Pro | Gly | Cys | Val | Pro | Cys | | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | | |
| Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | Ala | Leu | Thr | Pro | Thr | | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | | |
| Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | Thr | Ile | Arg | Arg | His | | | |
| | | 130 | | | | 135 | | | | | 140 | | | | | | | |
| Val | Asp | Leu | Leu | Val | Gly | Ala | Ala | Ala | Phe | Cys | Ser | Ala | Met | Tyr | Val | | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | | |
| Gly | Asp | Leu | Cys | Gly | Ser | Val | Phe | Leu | Val | Ser | Gln | Leu | Phe | Thr | Ile | | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | | |
| Ser | Pro | Arg | Arg | His | Glu | Thr | Val | Gln | Asp | Cys | Asn | Cys | Ser | Ile | Tyr | | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | | |
| Pro | Gly | His | Ile | Thr | Gly | His | Arg | Met | Ala | Trp | Asp | Met | Met | Met | Asn | | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | | |
| Trp | Ser | Pro | Thr | Thr | Ala | Leu | Val | Val | Ser | Gln | Leu | Leu | Arg | Ile | Pro | | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | | |
| Gln | Ala | Val | Val | Asp | Met | Val | Ala | Gly | Ala | His | Trp | Gly | Val | Leu | Ala | | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Gly | Leu | Ala | Tyr | Tyr | Ser | Met | Val | Gly | Asn | Trp | Ala | Lys | Val | Leu | Val | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | |
| Val | Met | Leu | Leu | Phe | Ala | Gly | Val | Asp | Gly | His | Thr | Arg | Val | Ser | Gly | | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | Val | Ser | Leu | Phe | Ser | Pro | | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | | |
| Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | Thr | Asn | Gly | Ser | Trp | His | | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | | |
| Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | Leu | Gln | Thr | Gly | Phe | | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | | |
| Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | Ser | Ser | Gly | Cys | Pro | | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | | |
| Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | Phe | Ala | Gln | Gly | Trp | | | |
| | | 340 | | | | | | 345 | | | | | 350 | | | | | |
| Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | Asp | Gln | Arg | Pro | Tyr | | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | | |
| Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | Val | Pro | Ala | Ser | Gln | | | |
| | 370 | | | | | 375 | | | | | 380 | | | | | | | |
| Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val | Val | Val | Gly | | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | | |

Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp
 405 410 415
 Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp
 420 425 430
 Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly
 435 440 445
 Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys
 450 455 460
 Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys
 465 470 475 480
 Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr
 485 490 495
 Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val
 500 505 510
 Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn
 515 520 525
 Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu
 530 535 540
 Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys
 545 550 555 560
 Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly Leu Ile His Leu His
 565 570 575
 Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val
 580 585 590
 Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu
 595 600 605
 Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile
 610 615 620
 Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala
 625 630 635 640
 Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys
 645 650 655
 Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala
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 Arg Ala Tyr Ala
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<211> 2433

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

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<221> mat_peptide

<222> 1..2427

<400> 49

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| Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn | |
| 1 5 10 15 | |
| cgc cgc cca cag gac gtc aag ttc ccg ggc ggt ggt cag atc gtt ggt | 96 |
| Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly | |
| 20 25 30 | |
| gga gtt tac ctg ttg ccg cgc agg ggc ccc agg ttg ggt gtg cgc gcg | 144 |
| Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala | |
| 35 40 45 | |
| act agg aag act tcc gag cgg tcg caa cct cgt ggg agg cga caa cct | 192 |
| Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro | |
| 50 55 60 | |
| atc ccc aag gct cgc cga ccc gag ggt agg gcc tgg gct cag ccc ggg | 240 |
| Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly | |
| 65 70 75 80 | |
| tac cct tgg ccc ctc tat ggc aat gag ggc atg ggg tgg gca gga tgg | 288 |
| Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp | |
| 85 90 95 | |
| ctc ctg tca ccc cgc ggc tct cgg cct agt tgg ggc cct aca gac ccc | 336 |
| Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro | |
| 100 105 110 | |
| cgg cgt agg tcg cgt aat ttg ggt aag gtc atc gat acc ctt aca tgc | 384 |
| Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys | |
| 115 120 125 | |
| ggc ttc gcc gac ctc gtg ggg tac att ccg ctc gtc ggc gcc ccc cta | 432 |
| Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu | |
| 130 135 140 | |
| ggg ggc gct gcc agg gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac | 480 |
| Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp | |
| 145 150 155 160 | |

| | |
|---|------|
| ggc gtg aac tat gca aca ggg aat ttg ccc ggt tgc tct ttc tct atc Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile 165 170 175 | 528 |
| ttc ctc ttg gct ttg ctg tcc tgt ctg acc gtt cca gct tcc gct tat Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr 180 185 190 | 576 |
| gaa gtg cgc aac gtg tcc ggg atg tac cat gtc acg aac gac tgc tcc Glu Val Arg Asn Val Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser 195 200 205 | 624 |
| aac tca agc att gtg tat gag gca gcg gac atg atc atg cac acc ccc Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro 210 215 220 | 672 |
| ggg tgc gtg ccc tgc gtt cgg gag aac aac tct tcc cgc tgc tgg gta Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val 225 230 235 240 | 720 |
| gcg ctc acc ccc acg ctc gca gct agg aac gcc agc gtc ccc acc acg Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr 245 250 255 | 768 |
| aca ata cga cgc cac gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Phe Cys 260 265 270 | 816 |
| tcc gct atg tac gtg ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser 275 280 285 | 864 |
| cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg cag gac tgc Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys 290 295 300 | 912 |
| aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt atg gct tgg Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala Trp 305 310 315 320 | 960 |
| gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg gta tcg cag Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln 325 330 335 | 1008 |
| ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His 340 345 350 | 1056 |
| tgg gga gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp 355 360 365 | 1104 |
| gct aag gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His 370 375 380 | 1152 |
| acc cgc gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg | 1200 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|------|
| Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | Val | | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | | |
| tcc | ctc | ttt | agc | ccc | ggg | tcg | gct | cag | aaa | atc | cag | ctc | gta | aac | acc | | | 1248 |
| Ser | Leu | Phe | Ser | Pro | Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | Thr | | | |
| | | | | 405 | | | | | 410 | | | | | 415 | | | | |
| aac | ggc | agt | tgg | cac | atc | aac | agg | act | gcc | ctg | aac | tgc | aac | gac | tcc | | | 1296 |
| Asn | Gly | Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | | | |
| | | | 420 | | | | | 425 | | | | | 430 | | | | | |
| ctc | caa | aca | ggg | ttc | ttt | gcc | gca | cta | ttc | tac | aaa | cac | aaa | ttc | aac | | | 1344 |
| Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | | | |
| | | | 435 | | | | 440 | | | | | 445 | | | | | | |
| tcg | tct | gga | tgc | cca | gag | cgc | ttg | gcc | agc | tgt | cgc | tcc | atc | gac | aag | | | 1392 |
| Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | | | |
| | 450 | | | | | 455 | | | | | 460 | | | | | | | |
| ttc | gct | cag | ggg | tgg | ggg | ccc | ctc | act | tac | act | gag | cct | aac | agc | tcg | | | 1440 |
| Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | | |
| gac | cag | agg | ccc | tac | tgc | tgg | cac | tac | gcg | cct | cga | ccg | tgt | ggg | att | | | 1488 |
| Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | |
| gta | ccc | gcg | tct | cag | gtg | tgc | ggg | cca | gtg | tat | tgc | ttc | acc | ccg | agc | | | 1536 |
| Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| cct | gtt | gtg | gtg | ggg | acg | acc | gat | cgg | ttt | ggg | gtc | ccc | acg | tat | aac | | | 1584 |
| Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr | Asn | | | |
| | | | 515 | | | | 520 | | | | | 525 | | | | | | |
| tgg | ggg | gcg | aac | gac | tcg | gat | gtg | ctg | att | ctc | aac | aac | acg | cgg | ccg | | | 1632 |
| Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg | Pro | | | |
| | 530 | | | | | 535 | | | | | 540 | | | | | | | |
| ccg | cga | ggc | aac | tgg | ttc | ggc | tgt | aca | tgg | atg | aat | ggc | act | ggg | ttc | | | 1680 |
| Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly | Phe | | | |
| 545 | | | | | 550 | | | | 555 | | | | | 560 | | | | |
| acc | aag | acg | tgt | ggg | ggc | ccc | ccg | tgc | aac | atc | ggg | ggg | gcc | ggc | aac | | | 1728 |
| Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly | Asn | | | |
| | | | | 565 | | | | | 570 | | | | | 575 | | | | |
| aac | acc | ttg | acc | tgc | ccc | act | gac | tgt | ttt | cgg | aag | cac | ccc | gag | gcc | | | 1776 |
| Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | Lys | His | Pro | Glu | Ala | | | |
| | | | 580 | | | | | 585 | | | | | 590 | | | | | |
| acc | tac | gcc | aga | tgc | ggg | tct | ggg | ccc | tgg | ctg | aca | cct | agg | tgt | atg | | | 1824 |
| Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | Thr | Pro | Arg | Cys | Met | | | |
| | | 595 | | | | | 600 | | | | | 605 | | | | | | |
| gtt | cat | tac | cca | tat | agg | ctc | tgg | cac | tac | ccc | tgc | act | gtc | aac | ttc | | | 1872 |
| Val | His | Tyr | Pro | Tyr | Arg | Leu | Trp | His | Tyr | Pro | Cys | Thr | Val | Asn | Phe | | | |

| 610 | 615 | 620 | |
|---|-----|-----|------|
| acc atc ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe 625 630 635 640 | | | 1920 |
| gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp 645 650 655 | | | 1968 |
| agg gat aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag tgg Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp 660 665 670 | | | 2016 |
| cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc ggc Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly 675 680 685 | | | 2064 |
| ctg atc cac ctc cat cag aac atc gtg gac gtg caa tac ctg tac ggt Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly 690 695 700 | | | 2112 |
| gta ggg tcg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu 705 710 715 720 | | | 2160 |
| ttg ctc ttc ctt ctc ctg gca gac gcg cgc atc tgc gcc tgc tta tgg Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp 725 730 735 | | | 2208 |
| atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg gtg Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val 740 745 750 | | | 2256 |
| gtc ctc aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe 755 760 765 | | | 2304 |
| ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc cct Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro 770 775 780 | | | 2352 |
| ggc ggc gca tac gcc ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu 785 790 795 800 | | | 2400 |
| ctg gcc tta cca cca cga gct tat gcc tagtaa Leu Ala Leu Pro Pro Arg Ala Tyr Ala 805 | | | 2433 |

<210> 50

<211> 809

<212> PRT

<213> Hepatitis C virus

<400> 50

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ser | Thr | Asn | Pro | Lys | Pro | Gln | Arg | Lys | Thr | Lys | Arg | Asn | Thr | Asn | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Arg | Arg | Pro | Gln | Asp | Val | Lys | Phe | Pro | Gly | Gly | Gly | Gln | Ile | Val | Gly | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| Gly | Val | Tyr | Leu | Leu | Pro | Arg | Arg | Gly | Pro | Arg | Leu | Gly | Val | Arg | Ala | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Thr | Arg | Lys | Thr | Ser | Glu | Arg | Ser | Gln | Pro | Arg | Gly | Arg | Arg | Gln | Pro | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ile | Pro | Lys | Ala | Arg | Arg | Pro | Glu | Gly | Arg | Ala | Trp | Ala | Gln | Pro | Gly | |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 | |
| Tyr | Pro | Trp | Pro | Leu | Tyr | Gly | Asn | Glu | Gly | Met | Gly | Trp | Ala | Gly | Trp | |
| | | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Leu | Ser | Pro | Arg | Gly | Ser | Arg | Pro | Ser | Trp | Gly | Pro | Thr | Asp | Pro | |
| | | | 100 | | | | | 105 | | | | | 110 | | | |
| Arg | Arg | Arg | Ser | Arg | Asn | Leu | Gly | Lys | Val | Ile | Asp | Thr | Leu | Thr | Cys | |
| | | 115 | | | | | 120 | | | | 125 | | | | | |
| Gly | Phe | Ala | Asp | Leu | Val | Gly | Tyr | Ile | Pro | Leu | Val | Gly | Ala | Pro | Leu | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Gly | Gly | Ala | Ala | Arg | Ala | Leu | Ala | His | Gly | Val | Arg | Val | Leu | Glu | Asp | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Gly | Val | Asn | Tyr | Ala | Thr | Gly | Asn | Leu | Pro | Gly | Cys | Ser | Phe | Ser | Ile | |
| | | | | 165 | | | | | 170 | | | | | 175 | | |
| Phe | Leu | Leu | Ala | Leu | Leu | Ser | Cys | Leu | Thr | Val | Pro | Ala | Ser | Ala | Tyr | |
| | | | 180 | | | | | 185 | | | | | 190 | | | |
| Glu | Val | Arg | Asn | Val | Ser | Gly | Met | Tyr | His | Val | Thr | Asn | Asp | Cys | Ser | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Asn | Ser | Ser | Ile | Val | Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr | Pro | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Gly | Cys | Val | Pro | Cys | Val | Arg | Glu | Asn | Asn | Ser | Ser | Arg | Cys | Trp | Val | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Leu | Thr | Pro | Thr | Leu | Ala | Ala | Arg | Asn | Ala | Ser | Val | Pro | Thr | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| Thr | Ile | Arg | Arg | His | Val | Asp | Leu | Leu | Val | Gly | Ala | Ala | Ala | Phe | Cys | |
| | | 260 | | | | | 265 | | | | | | 270 | | | |
| Ser | Ala | Met | Tyr | Val | Gly | Asp | Leu | Cys | Gly | Ser | Val | Phe | Leu | Val | Ser | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Gln | Leu | Phe | Thr | Ile | Ser | Pro | Arg | Arg | His | Glu | Thr | Val | Gln | Asp | Cys | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | Ile | Thr | Gly | His | Arg | Met | Ala | Trp | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Asp | Met | Met | Met | Asn | Trp | Ser | Pro | Thr | Thr | Ala | Leu | Val | Val | Ser | Gln | |
| | | | | 325 | | | | | 330 | | | | | 335 | | |
| Leu | Leu | Arg | Ile | Pro | Gln | Ala | Val | Val | Asp | Met | Val | Ala | Gly | Ala | His | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Trp | Gly | Val | Leu | Ala | Gly | Leu | Ala | Tyr | Tyr | Ser | Met | Val | Gly | Asn | Trp | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Ala | Lys | Val | Leu | Val | Val | Met | Leu | Leu | Phe | Ala | Gly | Val | Asp | Gly | His | |
| | 370 | | | | | 375 | | | | | 380 | | | | | |
| Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Ala | Ser | Asp | Thr | Arg | Gly | Leu | Val | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Ser | Leu | Phe | Ser | Pro | Gly | Ser | Ala | Gln | Lys | Ile | Gln | Leu | Val | Asn | Thr | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| Asn | Gly | Ser | Trp | His | Ile | Asn | Arg | Thr | Ala | Leu | Asn | Cys | Asn | Asp | Ser | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| Leu | Gln | Thr | Gly | Phe | Phe | Ala | Ala | Leu | Phe | Tyr | Lys | His | Lys | Phe | Asn | |
| | | 435 | | | | | 440 | | | | | 445 | | | | |
| Ser | Ser | Gly | Cys | Pro | Glu | Arg | Leu | Ala | Ser | Cys | Arg | Ser | Ile | Asp | Lys | |
| | 450 | | | | | 455 | | | | | 460 | | | | | |
| Phe | Ala | Gln | Gly | Trp | Gly | Pro | Leu | Thr | Tyr | Thr | Glu | Pro | Asn | Ser | Ser | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Ala | Pro | Arg | Pro | Cys | Gly | Ile | |
| | | | | 485 | | | | | 490 | | | | | 495 | | |
| Val | Pro | Ala | Ser | Gln | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | |
| | | | 500 | | | | | 505 | | | | | 510 | | | |
| Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Phe | Gly | Val | Pro | Thr | Tyr | Asn | |
| | | 515 | | | | | 520 | | | | | 525 | | | | |
| Trp | Gly | Ala | Asn | Asp | Ser | Asp | Val | Leu | Ile | Leu | Asn | Asn | Thr | Arg | Pro | |
| | 530 | | | | | 535 | | | | | 540 | | | | | |
| Pro | Arg | Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Gly | Thr | Gly | Phe | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | |
| Thr | Lys | Thr | Cys | Gly | Gly | Pro | Pro | Cys | Asn | Ile | Gly | Gly | Ala | Gly | Asn | |
| | | | | 565 | | | | | 570 | | | | | 575 | | |
| Asn | Thr | Leu | Thr | Cys | Pro | Thr | Asp | Cys | Phe | Arg | Lys | His | Pro | Glu | Ala | |
| | | | 580 | | | | | 585 | | | | | 590 | | | |
| Thr | Tyr | Ala | Arg | Cys | Gly | Ser | Gly | Pro | Trp | Leu | Thr | Pro | Arg | Cys | Met | |
| | | 595 | | | | | 600 | | | | | 605 | | | | |

Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe
 610 615 620
 Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe
 625 630 635 640
 Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp
 645 650 655
 Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp
 660 665 670
 Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly
 675 680 685
 Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly
 690 695 700
 Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu
 705 710 715 720
 Leu Leu Phe Leu Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp
 725 730 735
 Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val
 740 745 750
 Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe
 755 760 765
 Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro
 770 775 780
 Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu
 785 790 795 800
 Leu Ala Leu Pro Pro Arg Ala Tyr Ala
 805

<210> 51

<211> 17

<212> PRT

<213> Hepatitis C virus

<400> 51

Ser Asn Ser Ser Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys
 1 5 10 15
 Val

<210> 52

<211> 22
<212> PRT
<213> Hepatitis C virus

<400> 52

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Ile | Thr | Gly | His | Arg | Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Pro | Thr | Thr | Ala | Leu | | | | | | | | | | |
| | | | | 20 | | | | | | | | | | | |

<210> 53

<211> 37
<212> PRT
<213> Hepatitis C virus

<400> 53

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Glu | Val | Arg | Asn | Val | Ser | Gly | Ile | Tyr | His | Val | Thr | Asn | Asp | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Asn | Ser | Ser | Ile | Val | Tyr | Glu | Ala | Ala | Asp | Met | Ile | Met | His | Thr |
| | | | | 20 | | | | 25 | | | | | 30 | | |
| Pro | Gly | Cys | Gly | Lys | | | | | | | | | | | |
| | | | | 35 | | | | | | | | | | | |

<210> 54

<211> 25
<212> PRT
<213> Hepatitis C virus

<400> 54

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Thr | Pro | Thr | Val | Ala | Thr | Arg | Asp | Gly | Lys | Leu | Pro | Ala | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Leu | Arg | Arg | His | Ile | Asp | Leu | Leu | | | | | | | |
| | | | | 20 | | | | 25 | | | | | | | |

<210> 55

<211> 25
<212> PRT
<213> Hepatitis C virus

<400> 55

Gly Gly Thr Pro Thr Leu Ala Ala Arg Asp Ala Ser Val Pro Thr Thr
1 5 10 15

Thr Ile Arg Arg His Val Asp Leu Leu
20 25

<210> 56

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 56

Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Gln Val Arg Asn
1 5 10 15

Ser Thr Gly Leu
20

<210> 57

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 57

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro
1 5 10 15

Asn Ser Ser Ile
20

<210> 58

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 58

Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala His Asp Ala Ile
1 5 10 15

Leu His Thr Pro
20

<210> 59

<211> 20

<400> 59

<210> 60

<400> 60

<210> 61

<400> 61

<210> 62

<400> 62

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr
1 5 10 15
Gln Leu Arg Arg

20

<210> 63

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 63

Leu Pro Ala Thr Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser
1 5 10 15

Ala Thr Leu Cys
20

<210> 64

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 64

Leu Val Gly Ser Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu
1 5 10 15

Cys Gly Ser Val
20

<210> 65

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 65

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys
1 5 10 15

Asn Cys Ser Ile
20

<210> 66

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 66

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Gly | Cys | Asn | Cys | Ser | Ile | Tyr | Pro | Gly | His | Ile | Thr | Gly | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Arg | Met | Ala | Trp |
| | | | 20 |

<210> 67

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 67

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Thr | Gly | His | Arg | Met | Ala | Trp | Asp | Met | Met | Met | Asn | Trp | Ser | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Thr | Ala | Ala | Leu |
| | | | 20 |

<210> 68

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 68

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Trp | Ser | Pro | Thr | Ala | Ala | Leu | Val | Met | Ala | Gln | Leu | Leu | Arg | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Pro | Gln | Ala | Ile |
| | | | 20 |

<210> 69

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 69

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Arg | Ile | Pro | Gln | Ala | Ile | Leu | Asp | Met | Ile | Ala | Gly | Ala | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Trp | Gly | Val | Leu |
| | | | 20 |

<210> 70

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 70

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Ala | His | Trp | Gly | Val | Leu | Ala | Gly | Ile | Ala | Tyr | Phe | Ser | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val Gly Asn Met | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 71

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 71

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Leu | Leu | Leu | Phe | Ala | Gly | Val | Asp | Ala | Glu | Thr | Ile | Val | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly Gly Gln Ala | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 72

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 72

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Leu | Val | Ser | Leu | Phe | Thr | Pro | Gly | Ala | Lys | Gln | Asn | Ile | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu Ile Asn Thr | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 73

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 73

Gln Asn Ile Gln Leu Ile Asn Thr Asn Gly Gln Trp His Ile Asn Ser
1 5 10 15

Thr Ala Leu Asn
20

<210> 74

<211> 21

<212> PRT

<213> Hepatitis C virus

<400> 74

Leu Asn Cys Asn Glu Ser Leu Asn Thr Gly Trp Trp Leu Ala Gly Leu
1 5 10 15

Ile Tyr Gln His Lys
20

<210> 75

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 75

Ala Gly Leu Ile Tyr Gln His Lys Phe Asn Ser Ser Gly Cys Pro Glu
1 5 10 15

Arg Leu Ala Ser
20

<210> 76

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 76

Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Pro Leu Thr Asp Phe Asp
1 5 10 15

Gln Gly Trp Gly
20

<210> 77

<211> 20

<212> PRT
<213> Hepatitis C virus

<400> 77

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asp | Phe | Asp | Gln | Gly | Trp | Gly | Pro | Ile | Ser | Tyr | Ala | Asn | Gly | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly Pro Asp Gln | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 78

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 78

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asn | Gly | Ser | Gly | Pro | Asp | Gln | Arg | Pro | Tyr | Cys | Trp | His | Tyr | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro Lys Pro Cys | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 79

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 79

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | His | Tyr | Pro | Pro | Lys | Pro | Cys | Gly | Ile | Val | Pro | Ala | Lys | Ser | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Cys Gly Pro Val | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | |

<210> 80

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 80

| | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Ser | Val | Cys | Gly | Pro | Val | Tyr | Cys | Phe | Thr | Pro | Ser | Pro | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val Val Gly Thr | | | | | | | | | | | | | | | |

20

<210> 81

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 81

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Pro | Val | Val | Val | Gly | Thr | Thr | Asp | Arg | Ser | Gly | Ala | Pro | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Tyr | Ser | Trp | Gly |
| | | | 20 |

<210> 82

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 82

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Pro | Thr | Tyr | Ser | Trp | Gly | Glu | Asn | Asp | Thr | Asp | Val | Phe | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Leu | Asn | Asn | Thr |
| | | | 20 |

<210> 83

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 83

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Trp | Phe | Gly | Cys | Thr | Trp | Met | Asn | Ser | Thr | Gly | Phe | Thr | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | |
|-----|-----|-----|-----|
| Val | Cys | Gly | Ala |
| | | | 20 |

<210> 84

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 84

Gly Phe Thr Lys Val Cys Gly Ala Pro Pro Val Cys Ile Gly Gly Ala
1 5 10 15

Gly Asn Asn Thr
20

<210> 85

<211> 19

<212> PRT

<213> Hepatitis C virus

<400> 85

Ile Gly Gly Ala Gly Asn Asn Thr Leu His Cys Pro Thr Asp Cys Arg
1 5 10 15

Lys His Pro

<210> 86

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 86

Thr Asp Cys Phe Arg Lys His Pro Asp Ala Thr Tyr Ser Arg Cys Gly
1 5 10 15

Ser Gly Pro Trp
20

<210> 87

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 87

Ser Arg Cys Gly Ser Gly Pro Trp Ile Thr Pro Arg Cys Leu Val Asp
1 5 10 15

Tyr Pro Tyr Arg
20

<210> 88

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 88

Cys Leu Val Asp Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Ile
1 5 10 15

Asn Tyr Thr Ile
20

<210> 89

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 89

Pro Cys Thr Ile Asn Tyr Thr Ile Phe Lys Ile Arg Met Tyr Val Gly
1 5 10 15

Gly Val Glu His
20

<210> 90

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 90

Met Tyr Val Gly Gly Val Glu His Arg Leu Glu Ala Ala Cys Asn Trp
1 5 10 15

Thr Pro Gly Glu
20

<210> 91

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 91

Ala Cys Asn Trp Thr Pro Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp
1 5 10 15

Arg Ser Glu Leu
20

<210> 92

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 92

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Arg | Asp | Arg | Ser | Glu | Leu | Ser | Pro | Leu | Leu | Leu | Thr | Thr | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Gln Trp Gln Val
20

<210> 93

<211> 9

<212> PRT

<213> Hepatitis C virus

<400> 93

| | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Gln | Val | Arg | Asn | Ser | Thr | Gly | Leu |
| 1 | | | | 5 | | | | |

<210> 94

<211> 29

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 94

acgtccgtac gttcgaatta attaatcga

29

<210> 95

<211> 60

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc_feature

<223>/note="antisense"

<400> 95

cctccggacg tgcactagct cccgtctgtg gtagtggtgg tagtgattat caattaattg 60

<210> 96

<211> 19

<212> DNA

<213> Hepatitis C virus

<400> 96

gtttaaccac tgcattgatg 19

<210> 97

<211> 20

<212> DNA

<213> Hepatitis C virus

<400> 97

gtcccatcga gtgcggctac 20

<210> 98

<211> 45

<212> DNA

<213> Hepatitis C virus

<400> 98

cgtgacatgg tacattccgg acacttggcg cacttcataa gcgga 45

<210> 99

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 99

tgccatcatc acaatggagc tctgggacga gtcgttcgtg ac 42

<210> 100

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 100

tacccagcag cgggagctct gttgctcccg aacgcagggc ac

42

<210> 101

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 101

tgtcgtgggtg gggacggagg cctgcctagc tgcgagcgtg gg

42

<210> 102

<211> 48

<212> DNA

<213> Hepatitis C virus

<400> 102

cgttatgtgg cccgggtaga ttgagcactg gcagtcctgc accgtctc

48

<210> 103

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 103

cagggccggtt ctaggcctcc actgcatcat catatcccaa gc

42

<210> 104

<211> 26

<212> DNA

<213> Hepatitis C virus

<400> 104

ccggaatgta ccatgtcacg aacgac

26

<210> 105

<211> 24

<212> DNA

<213> Hepatitis C virus

<400> 105
gctccattgt gtatgaggca gcgg 24

<210> 106

<211> 23
<212> DNA
<213> Hepatitis C virus

<400> 106
gagctcccg c tgctgggtag cgc 23

<210> 107

<211> 25
<212> DNA
<213> Hepatitis C virus

<400> 107
cctccgtccc caccacgaca atacg 25

<210> 108

<211> 27
<212> DNA
<213> Hepatitis C virus

<400> 108
ctacccgggc cacataacgg gtcaccg 27

<210> 109

<211> 24
<212> DNA
<213> Hepatitis C virus

<400> 109
ggaggcctac aacggccctg gtgg 24

<210> 110

<211> 22

<212> DNA
<213> Hepatitis C virus

<400> 110

ttctatcgat taaatagaat tc

22

<210> 111

<211> 23
<212> DNA
<213> Hepatitis C virus

<400> 111

gccatacgct cacagccgat ccc

23

<210> 112

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 112

Tyr Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
1 5 10 15

Ser Asn Ser Ser
20

<210> 113

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 113

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp
1 5 10 15

Met Ile Met His Thr
20

<210> 114

<211> 20
<212> PRT
<213> Hepatitis C virus

<400> 114

Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val
1 5 10 15

Arg Glu Asn Asn Ser
20

<210> 115

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 115

Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu
1 5 10 15

Thr Pro Thr Leu Ala
20

<210> 116

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 116

Val Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro
1 5 10 15

Thr Thr Thr Ile Arg
20

<210> 117

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 117

Ser Val Pro Thr Thr Thr Ile Arg Arg His Val Asp Leu Leu Val
1 5 10 15

Gly Ala Ala Ala Phe
20

<210> 118

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 118

Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly
1 5 10 15

Asp Leu Cys Gly Ser
20

<210> 119

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 119

Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu
1 5 10 15

Phe Thr Ile Ser Pro
20

<210> 120

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 120

Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln
1 5 10 15

Asp Cys Asn Cys Ser
20

<210> 121

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 121

Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr
1 5 10 15

Gly His Arg Met Ala
20

<210> 122

<211> 20

<212> PRT

1



ds

| Set | Items | Description |
|-----|---------|-----------------------|
| S1 | 27459 | HEPATITIS(W)C |
| S2 | 2881 | CHIMP OR CHIMPANZEE |
| S3 | 223 | S1 AND S2 |
| S4 | 1009729 | DT=REVIEW? |
| S5 | 18 | S3 AND S4 |
| S6 | 931878 | MODEL OR MODELS |
| S7 | 46 | S1 AND S2 AND S6 |
| S8 | 37 | S7 NOT S5 |
| S9 | 37 | Sort S8/ALL/PY |
| S10 | 2645 | CHIMPS OR CHIMPANZEES |
| S11 | 169 | S1 AND S10 NOT S3 |
| S12 | 29 | S4 AND S11 |
| S13 | 25 | S6 AND S11 |
| S14 | 59 | AU=MAERTENS G? |
| S15 | 45 | S1 AND S14 |

? log hold

24may04 11:29:30 User208669 Session D2539.2

\$10.22 3.194 DialUnits File155

\$0.00 154 Type(s) in Format 6

\$5.46 26 Type(s) in Format 7

\$5.46 180 Types

\$15.68 Estimated cost File155

\$8.00 TELNET

\$23.68 Estimated cost this search

\$24.00 Estimated total session cost 3.285 DialUnits

Logoff: level 04.09.00 D 11:29:30